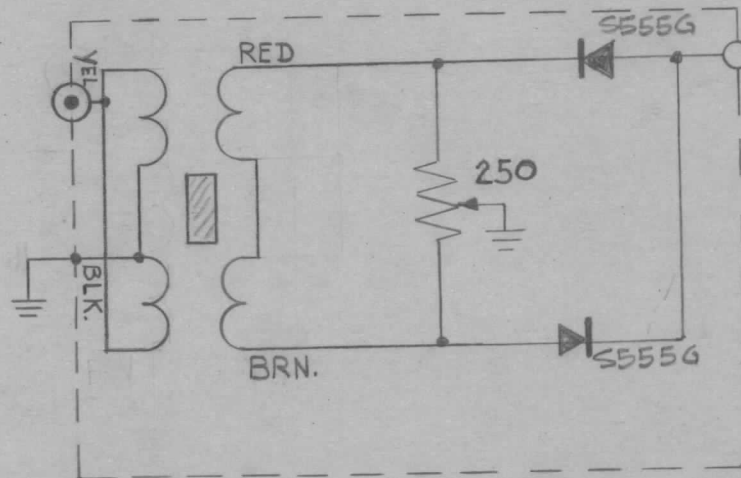
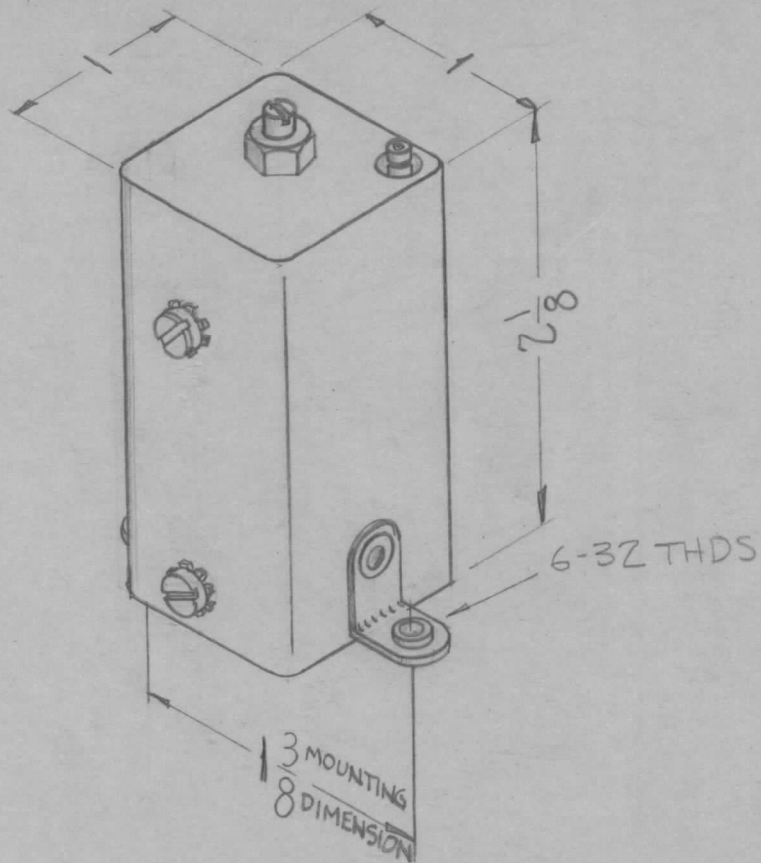


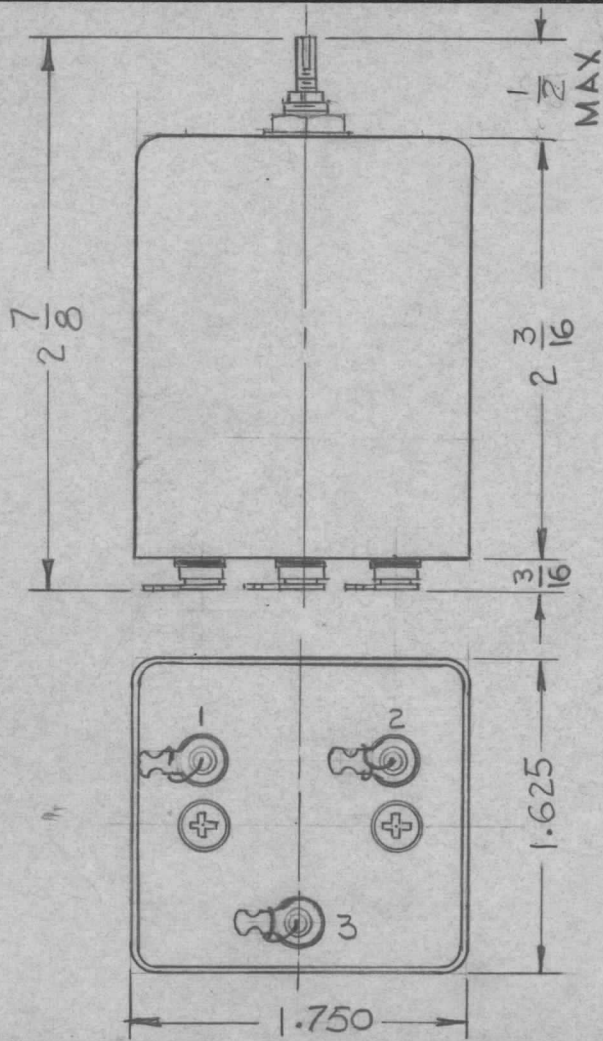
REQ. PER. UNIT	USED ON			NW-100	A
	MODEL	ASSY. NO.	DATE		
1	CHG-1	MF/RF	11-22-60		



							REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
							STOCK SIZE		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
							MATERIAL		NETWORK, BALANCE MODULATOR	
A	1	CHANGED SCHEMATIC TO CONFORM WITH CK-447	2-8-61	AD666	M.F.	JCB				
ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.			
TOLERANCES			SCALE: 2A-2027				DRAWN		CHECKED	FINAL APPROVAL
DEC. DIM. ±			MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES				TYPE & TEMPER		HEAT TREAT. SPEC.	
FRAC. DIM. ±							FINISH & SPEC. NO.		ELEC. DES. APP	
ANGULAR DIM. ±									NW-100	A

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE FOR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

REQ. PER UNIT 1	USED ON		NW-101	Ø
	MODEL GPR-92	ASS'Y. NO.		

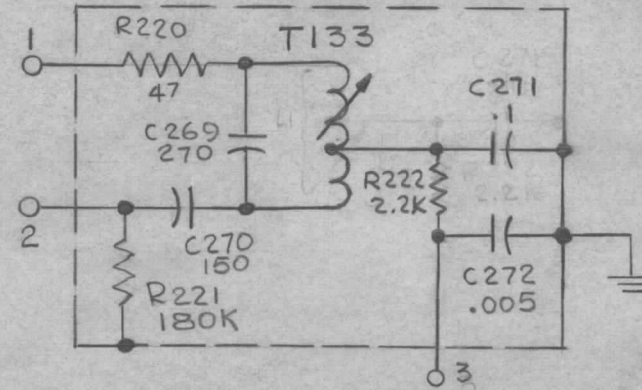


MODEL	REQ.	FUNCTION	OPER. FREQ.	SYMBOL
GPR-92	1	BFO	455 ± 3 KC	Z101

SPECIFICATIONS

MECHANICAL:
MOUNTING DATA: HORIZONTALLY MOUNTED ON TOP OF CAN WITH TWO #6-32 SCREWS.
CASE FINISH: TIN PLATED.

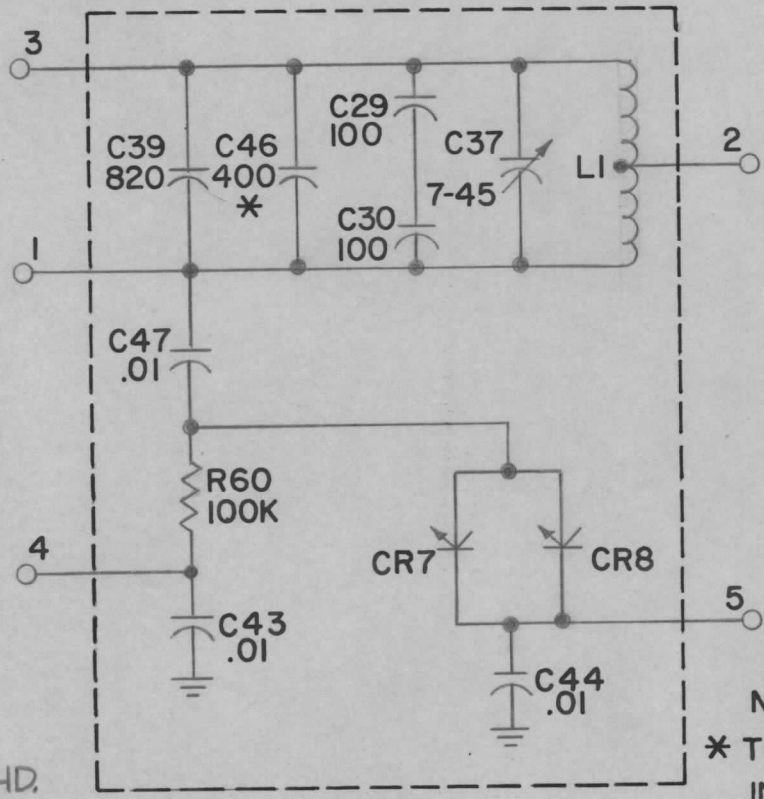
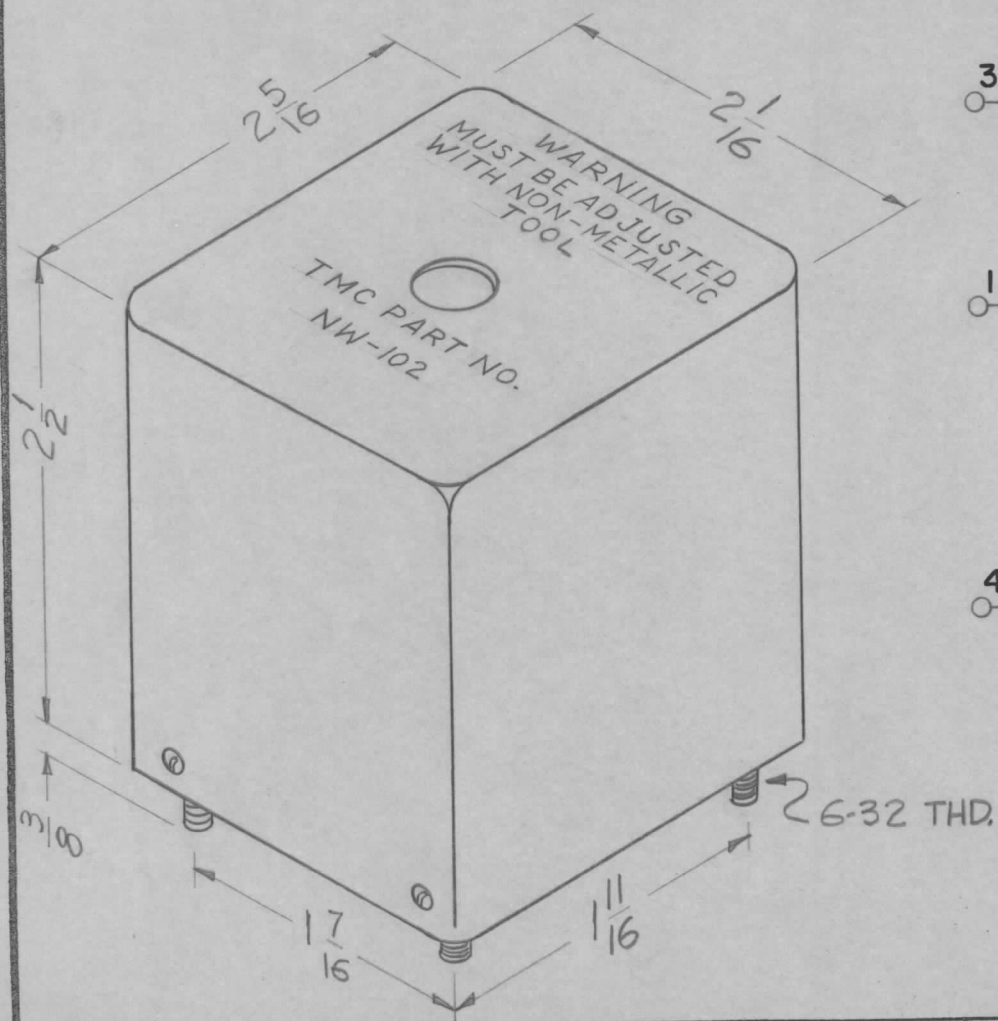
ELECTRICAL:
OPERATING FREQUENCY:



SCHEMATIC DIAGRAM

REQ.	ITEM	PART NO.	M. GELLMAN DESCRIPTION			SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
			BFO NET WORK			
Ø	ORIGINAL RELEASE FOR PRODUCTION	7/7/64	Ø	A.M.		
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE 4A-3112				
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	TOLERANCES	FRACTIONS ± 1/64 ANGLES ± 0° 30'	CODE A			
				TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN G.D.L @ 7/7/64
						CHECKED MP
						FINAL APPROVAL NW-101
				FINISH & SPEC. NO.	ELEC. DES. APP.	MECH. DES. APP.

REQ. PER. UNIT /	USED ON			NW-102
	MODEL AFC-1B	ASS'Y. NO.	DATE 8-15-61	

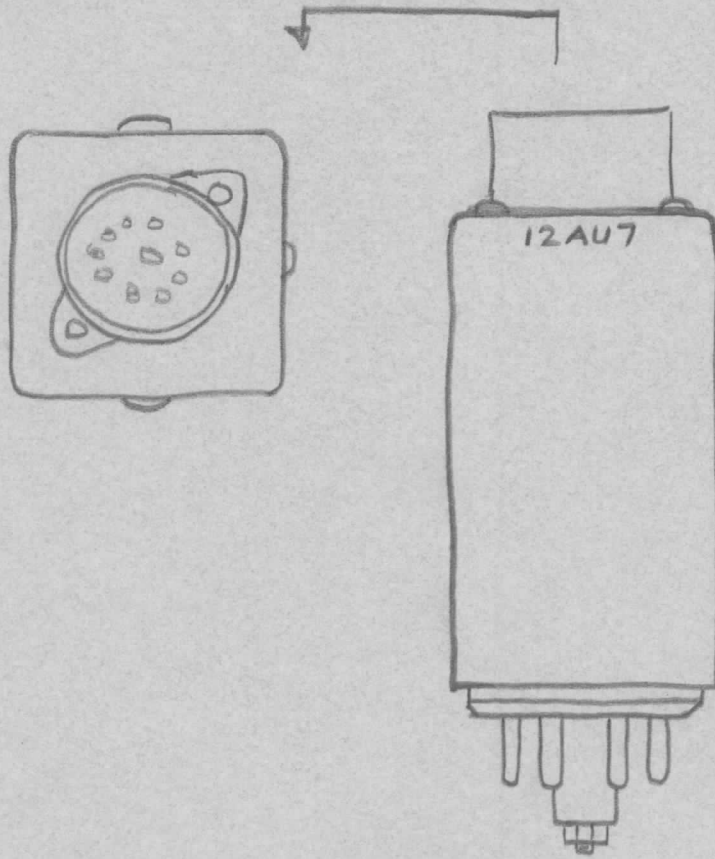


NOMINAL VALUE.
* TO BE DETERMINED IN TEST.

SCHEMATIC

								REQ.	ITEM	PART NO.	DESCRIPTION			SYMBOL					
											THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK								
								STOCK SIZE			17 KC OSCILLATOR NETWORK								
								MATERIAL			G.D.L.								
ISSUE	ITEM	CHANGED FROM	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.			TYPE & TEMPER	HEAT TREAT. SPEC.	DRAWN	CHECKED	FINAL APPROVAL					
TOLERANCES			SCALE: 4A-3037											NW-102					
DEC. DIM. ±			MAXIMUM ALLOWABLE TOLERANCES HAVE BEEN DETERMINED AND ANY DEVIATIONS WILL BE CAUSE FOR REJECTION. REMOVE ALL BURRS AND SHARP EDGES																
FRAC. DIM. ±																			
ANGULAR DIM. ±																			
								FINISH & SPEC. NO.		ELEC. DES. APP		MECH. DES. APP							

REQ. PER UNIT	USED ON			NW103	Ø
	MODEL	ASS'Y. NO.	DATE		
1	SBE-2				
1	SBE-3				



THIS ITEM IS FOR
SPARE PARTS REPLACEMENT
OF SYMBOL A101
IN SBE. IT IS A
SUBASSY OF A458.

REQ.	ITEM	PART NO.	DESCRIPTION				SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
			STOCK SIZE				
			NETWORK, OSCILLATOR, 250KC				
Ø	ORIGINAL RELEASE	9/26/69	W				
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE					
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		TOLERANCES		FRACTIONS ± 1/64 ANGLES ± 0° 30'	CODE	4A1458-2	
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKED	FINAL APPROVAL		
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.	NW103 Ø			

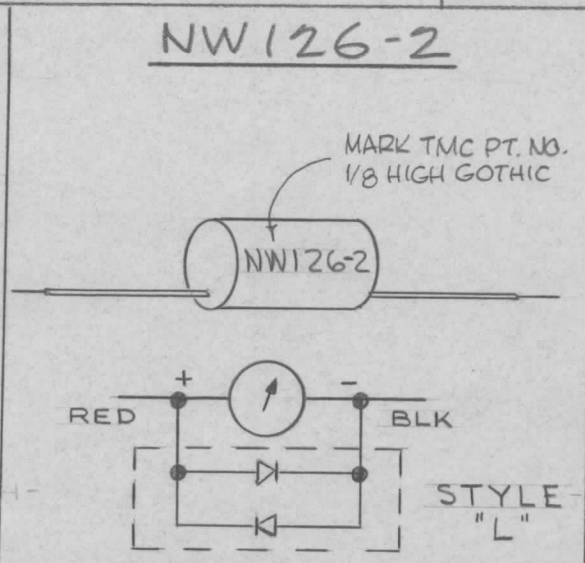
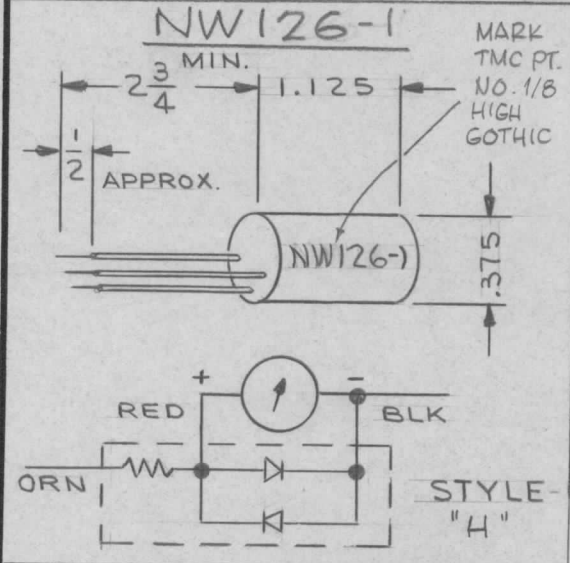
TMC PT. NO.	STYLE	USE WITH METER CHARACTERISTICS			REQ. PER UNIT	USED ON		
		METER R	METER I	METER E		MODEL	ASS'Y. NO.	DATE

NW126-1	H	1000 Ω	200 μA	.200 V
NW126-2	L	46 Ω	1 mA	.046 V

— SPECIFICATIONS —

OPERATING TEMP. RANGE : -65° TO +100°C
 RESPONSE TIME : 3 NANOSECOND MAX.
 RECOVERY TIME : 3 NANOSECOND MAX.
 INTERNAL RESISTOR : 0.6 % METER RES. MAX.
 POLARITY : NONE
 CASE : PLASTIC, EPOXY SEAL
 TERMINAL : INSULATED, TINNED STRANDED COPPER

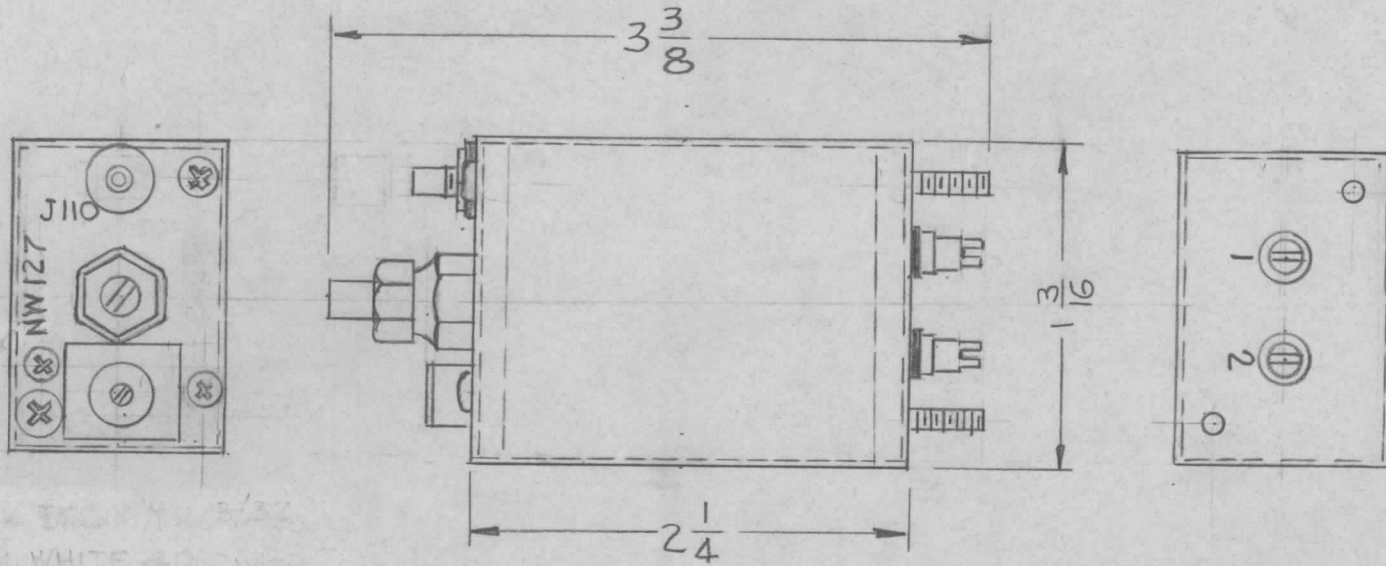
NW126 ∅



FOR MTG : CU102-5

REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
		STOCK SIZE	
		MATERIAL	
∅	ORIGINAL RELEASE FOR PRODUCTION	4/19/65	JL
SYM	DESCRIPTION	DATE	CH. NO. DRAFTS CHECKER ENG. APP.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	TOLERANCES	FRACTIONS ± 1/64 ANGLES ± 0° 30'	CODE S401-373 (MP-9000)
		J.L. 4/15/65	JOKS
		FRD 4-20-65	4/20/65
			FINAL APPROVAL
			NW126 ∅

REQ. PER UNIT	USED ON		
	MODEL	ASS'Y. NO.	DATE
1	SBE-2A		4-14-65
NW 127 \emptyset			

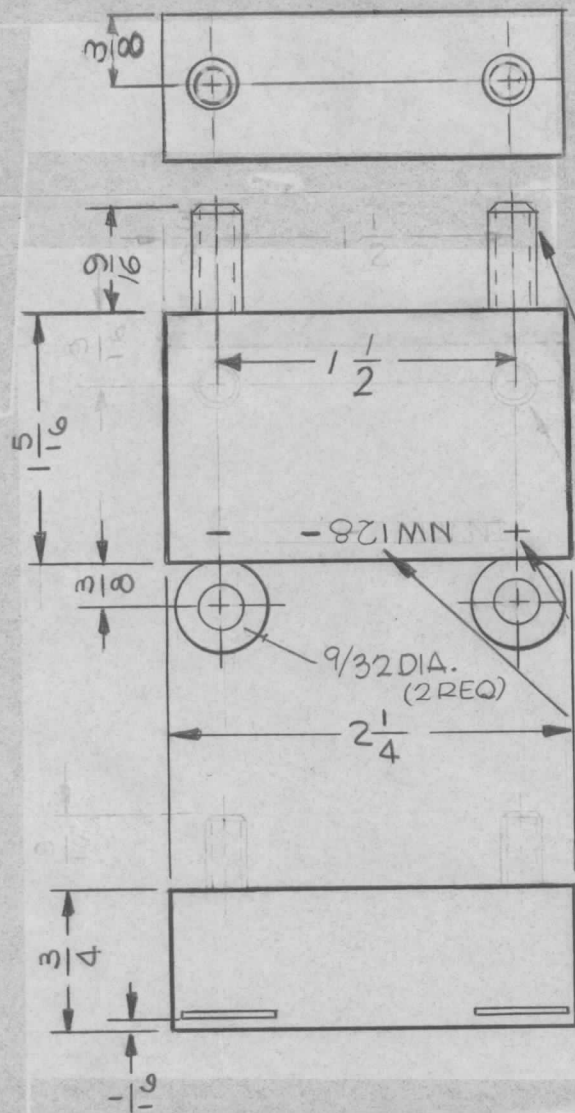


— ELEC. SPECIFICATIONS —

INCOMING FREQ. = 8-34 MC / 2-4 MC
 RESULTANT FREQ. = 2-32 MC
 INPUT INPEDANCE = 50- Ω NOMINAL
 OUTPUT INPEDANCE = 50- Ω NOMINAL

REQ.	ITEM	PART NO.	DESCRIPTION			SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
			HF MODULATOR			
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE 1:1				
DECIMALS .X \pm .05 .XX \pm .01 .XXX \pm .005		TOLERANCES		FRACTIONS \pm 1/64 ANGLES \pm 0° 30'		CODE
		A.4230 (4)				
TYPE & TEMPER		HEAT TREAT. SPEC.		DRAWN		CHECKED
				G.D.L		OFFER
FINISH & SPEC. NO.		ELEC. DES. APP.		MECH. DES. APP.		NW 127 \emptyset

REQ. PER UNIT	USED ON			NW128	A
	MODEL	ASS'Y. NO.	DATE		
	GPT-10K		4-19-65		
	KIT 213				



TMC PT. NO.	USE WITH METER CHARACTERISTICS		
	METER "R"	METER "I"	METER "E"
NW128-1	1000 Ω	200 μ A	.200V
NW128-2	46 Ω	1 mA	.046V

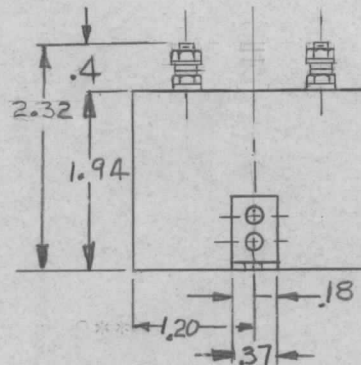
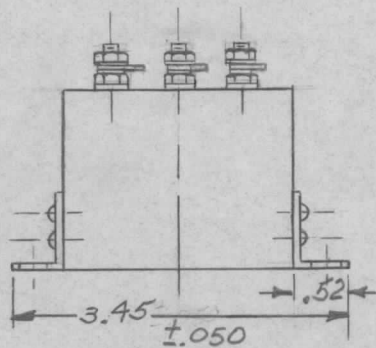
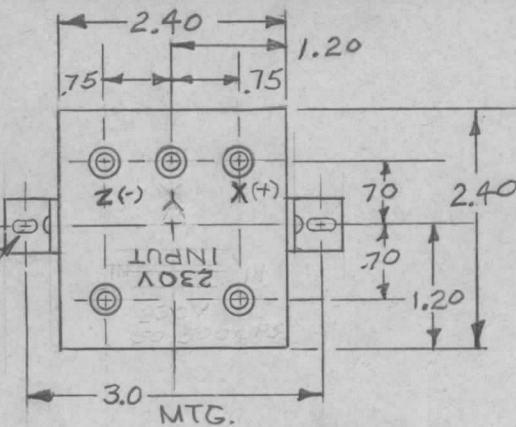
(2) 1/4-20 NC-2A TERMINALS
(SUPPLIED WITH MTG HDW)

MARK IN 1/8 HIGH GOTHIC, WHITE
TMC PT. NO. & POLARITY
SYMBOLS.

REQ.	ITEM	PART NO.	DESCRIPTION				SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
			STOCK SIZE				
A	1/4 X 20 STUDS RELOCATED	14988	NETWORK, METER PROTECTIVE,				
	ORIGINAL RELEASE FOR PRODUCTION	4/20/65	VOLTAGE SENSITIVE				
			MATERIAL				
			GL106				
			TYPE & TEMPER		HEAT TREAT. SPEC.		
			DRAWN		CHECKED		
			FINAL APPROVAL				
			FINISH & SPEC. NO.		ELEC. DES. APP.		
			MECH. DES. APP.		NW128 A		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	SCALE	2A-4236
DECIMALS .X \pm .05 .XX \pm .01 .XXX \pm .005	TOLERANCES	
FRACTIONS \pm 1/64 ANGLES \pm 0° 30'		

MOUNTING
SLOT .15 X .22
(2 REQ)



REQ. PER UNIT	USED ON		
	MODEL	ASS'Y. NO.	DATE
1	TSTE 10K		8/27/65
1	TSTE 2.5K		

NW131

A

- X. D.C. OUTPUT PLUS (TO RELAY HEADER TERMINAL #8) *
- Y. LAMP VOLTAGE OUTPUT (TO METER HEADER TERMINAL #2) *
- Z. D.C. OUTPUT MINUS (TO RELAY HEADER TERMINAL #9) *

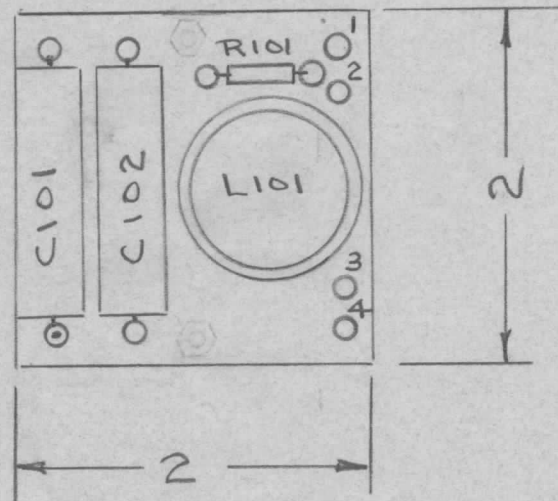
* NW132
MR187

REQ.	ITEM	PART NO.	DESCRIPTION				SYMBOL	
A			CHGD 4.32 TO 2.32. CHG'D TERM. STYLE. ADD DIM. .4. DELE 50-500 CPS & "IN. REVERSE "Y" & 230V INPUT. MFG P/N WAS 600203					
			ORIGINAL RELEASE FOR PRODUCTION					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			SCALE	2:1				
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		TOLERANCES		FRACTIONS ± 1/64 ANGLES ± 0° 30'		CODE	5401-44(60250-3)	
THE TECHNICAL MATERIEL CORP. MAMARONECK. NEW YORK			NETWORK, POWER, SUPPLY, RELAY, METER					
MATERIAL			DRAWN					
TYPE & TEMPER			HEAT TREAT. SPEC.					
FINISH & SPEC. NO.			ELEC. DES. APP.					
			MECH. DES. APP.					
			DRAWN					
			CHECKED					
			FINAL APPROVAL					
			DRAWN					
			CHECKED					
			FINAL APPROVAL					
			DRAWN					
			CHECKED					
			FINAL APPROVAL					

REQ. PER UNIT	USED ON			NW 133	Ø
	MODEL	ASS'Y. NO.	DATE		
	RARB-1				

MFG. PART NUMBER FREQ. CPS

601-XR	420
602-XR	540
603-XR	660
604-XR	780
605-XR	900
606-XR	1020
607-XR	1140
608-XR	1260
609-XR	1380
610-XR	1500
611-XR	1620
612-XR	1740
613-XR	1860
614-XR	1980
615-XR	2100
616-XR	2220
617-XR	2340
618-XR	2460
619-XR	2580
620-XR	2700
621-XR	2820
622-XR	2940
623-XR	3060
624-XR	3180



NOMENCLATURE WILL BE IN FOLLOWING FORM

NW 133
TMC
BASIC

— 1980
FREQ.
IN
CPS

REQ.	ITEM	PART NO.	DESCRIPTION				SYMBOL
			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
			STOCK SIZE				
			NETWORK ASSEMBLY FOR F.S.				
			TONE RECEIVER				
Ø	ORIGINAL RELEASE	9/26/69	W				
SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE					
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005		FRACTIONS ± 1/64 ANGLES ± 0° 30'	CODE				
TOLERANCES			S401	(GOO SERIES)			
TYPE & TEMPER		HEAT TREAT. SPEC.	DRAWN	CHECKED	FINAL APPROVAL		
FINISH & SPEC. NO.		ELEC. DES. APP.	MECH. DES. APP.	NW 133			Ø

APPLICATION

QTY 1
MODEL USED ON MMX-()

ASS'Y NO.

A

LTR

A

DESCRIPTION

Redrawn & Redesigned

DATE

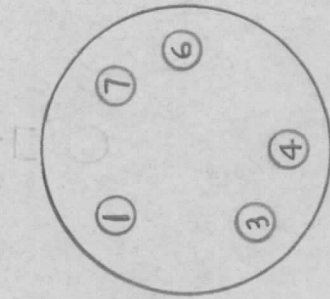
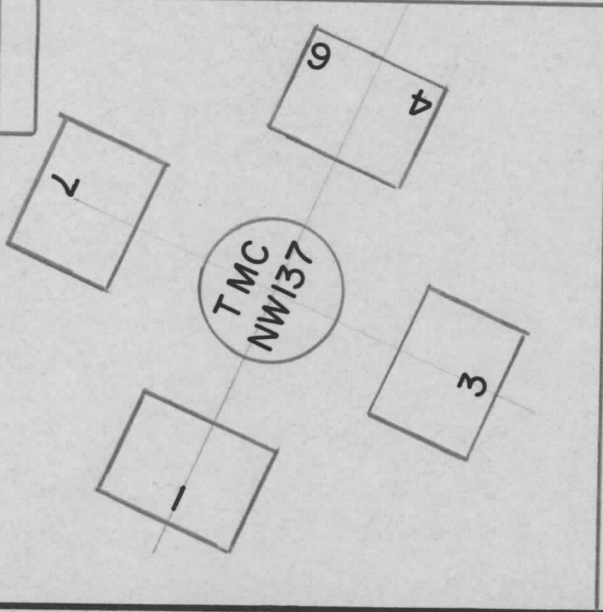
5-17-82

DRAFT

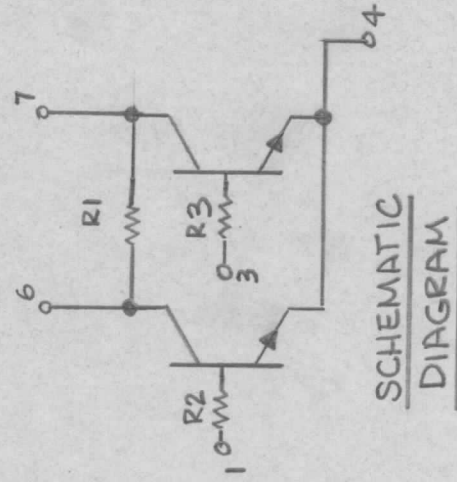
[Signature]

APPD

REVISIONS



TOP VIEW
PIN POSITION



SCHEMATIC
DIAGRAM

REFERENCE AS797

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005				LIST OF MATERIAL	
FRACTIONS 1/64 TOLS. ANGLES 0°-30'					THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK
MATERIAL	FINAL APPROVAL	MECH. DES.	DATE	NETWORK, GATE ELEMENT	
FINISH	ELECT. DES.	CHECKED	DATE		
	DRAWN		DATE		
			DATE		
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.				SIZE A CODE IDENT. NO. 82679 DWG NO. NW137 ISSUE A	SCALE SHEET OF

REVISIONS

APPLICATION

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	MSAR-4		X	EXPERIMENTAL RELEASE	8/28/67	X	C.V.		
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		
			A	PICTORIAL W/DIM ADDED	2/17/69	19335	FX		

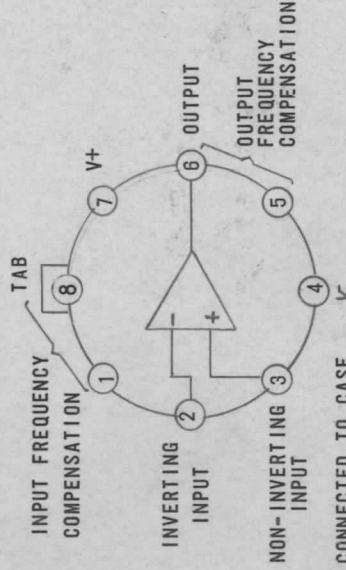
MFGR: S401-440

MFGR PART NO: U5B770939X (uA709C)

MFGR CAT. NO: SL-124 (OCT 1965)

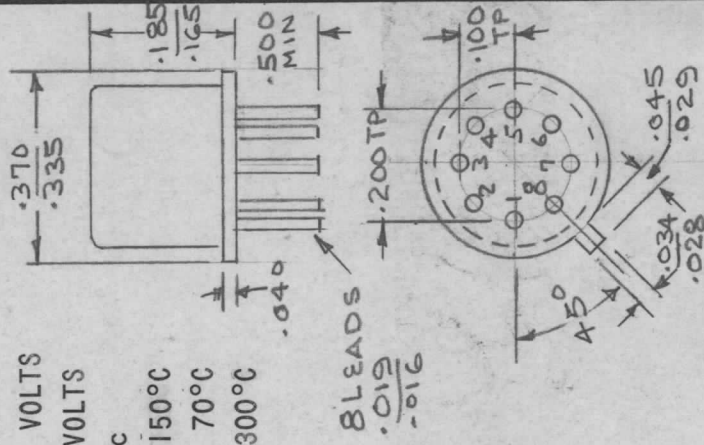
ABSOLUTE MAXIMUM RATINGS

- SUPPLY VOLTAGE ±18 VOLTS
- INTERNAL POWER DISSIPATION 250 mW
- DIFFERENTIAL INPUT VOLTAGE: ±5.0 VOLTS
- INPUT VOLTAGE: ±10 VOLTS
- OUTPUT SHORT-CIRCUIT DURATION (T_A = 25°C) 5 sec
- STORAGE TEMPERATURE RANGE -65°C TO +150°C
- OPERATING AMBIENT TEMPERATURE RANGE 0°C TO + 70°C
- LEAD TEMPERATURE (SOLDERING, 60 sec) 300°C



NOTE: PIN 4 CONNECTED TO CASE

CONNECTION DIAGRAM (TOP VIEW)



PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC
 1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
 2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOGS.

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
R. HOGAN				
FINAL APPROVAL	DATE			
MECH. DES.	DATE			
ELECT. DES.	DATE			
CHECKED	DATE			
DRAWN	DATE			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
NETWORK, OPERATIONAL AMPLIFIER				

SIZE A	CODE IDENT. NO. 82679	DWG NO. NW 156	ISSUE A
SCALE		SHEET	OF

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APPLICATION			REVISIONS						
QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
1	SWCD-3K		X	EXPERIMENTAL RELEASE	11/10/67		C.U.		
			Ø	ORIGINAL RELEASE FOR PRODUCTION	3-15-68		G.D.L.		J.D.

TMC P/N: NW 161
 MFGR P/N: 4-15144-10
 MODEL: 70NL
 MFGR (TMC CODE #): S401-460

SPECIFICATIONS

OUTPUT MODE: NON LATCHING
 MAX OUTPUT RATING: 50mA

RANGES: 100 µA
 INPUT RESISTANCE: 105 Ω ±10%
 SET POINT RANGE: 0-100 µA
 SET POINT RESOLUTION: 1µA
 HYSTERESIS: 3µA MAX

PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC.

1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOGS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005					
FRACTIONS 1/64 ANGLES 0°-.30'					
MATERIAL				LIST OF MATERIAL	
FINISH				THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
S401-460				NETWORK, COMPARATOR	
				SIZE A	
				CODE IDENT. NO. 82679	
				DWG NO. NW 161	
				SCALE	
				SHEET	OF

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REVISIONS

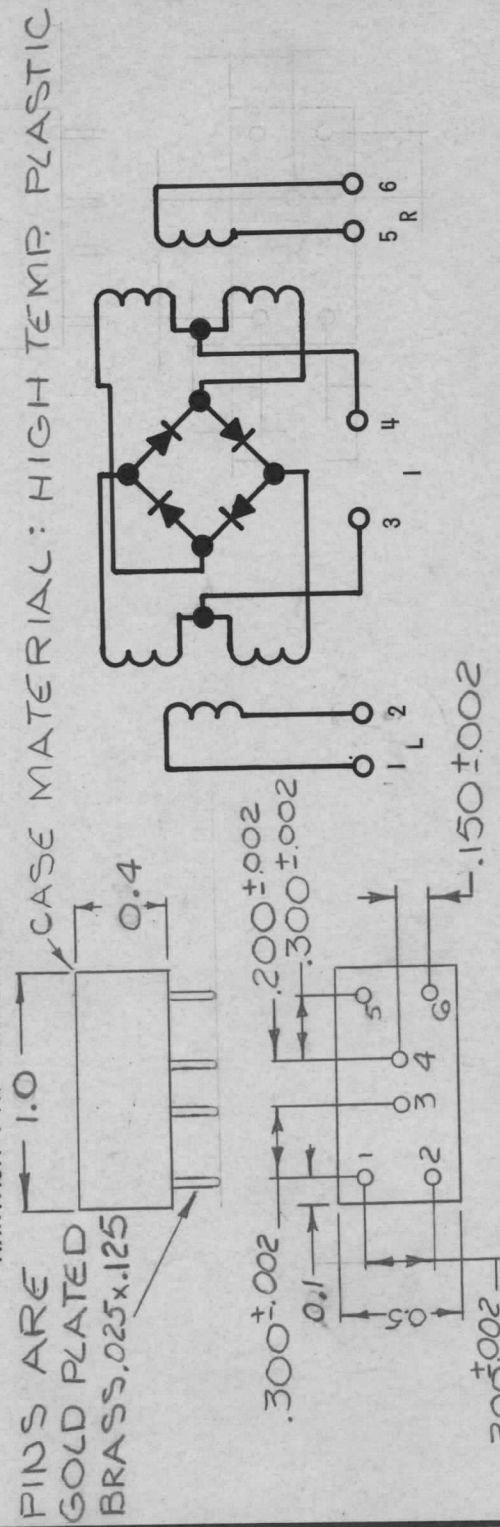
APPLICATION

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	MMX(-)-2		X	EXPERIMENTAL RELEASE	3/4/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD.	3-11-68	Ø	R.G.		

MFGR(TMC CODE NO.): S401-468
 MFGR CATALOG NUMBER: MODEL M6

ABSOLUTE MAXIMUM RATINGS

(LIMITING VALUES, BEYOND WHICH THE MIXER MAY BE DAMAGED)
 OPERATING AND STORAGE TEMPERATURE: -65°C TO +100°C
 MAXIMUM PEAK INPUT POWER: 50 MILLIWATTS
 MAXIMUM PEAK CURRENT, ANY PORT: 50 MILLIAMPS
 MAXIMUM PIN TEMPERATURE: 500°F



PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC.

1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOG.

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
O. ROSE				
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP.				
MAMARONECK, NEW YORK				
NETWORK, MIXER, DOUBLE BALANCED				

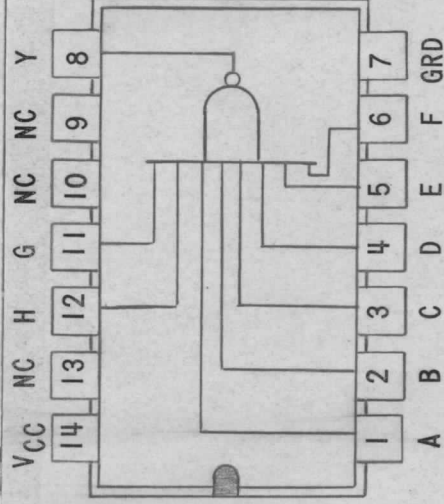
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
A	82679	NW 163	Ø
SCALE: NONE		SHEET	OF

NOTICE TO PERSONS RECEIVING THIS DRAWING
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APPLICATION

REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	3/7/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		
			A	DIM. OUTLINE ADDED	3/26/69	19351	JA	JA	



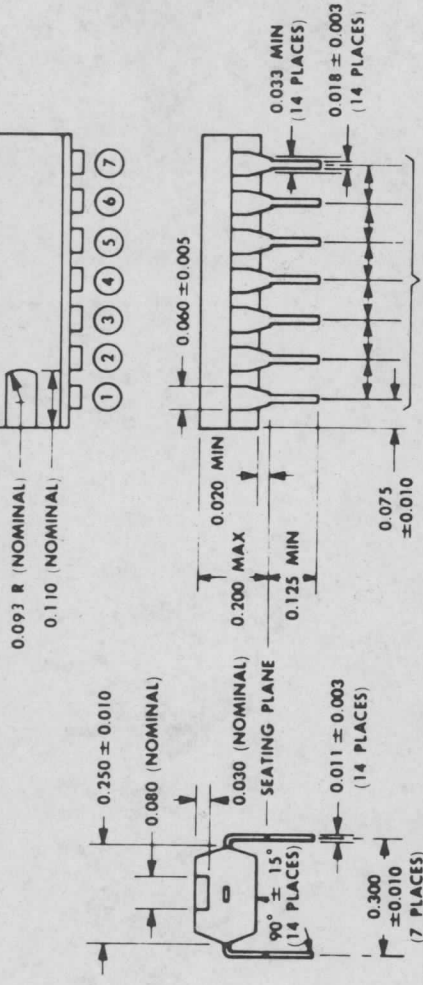
POSITIVE LOGIC
Y = ABCDEFGH

RECOMMENDED OPERATING CONDITION

SUPPLY VOLTAGE V_{CC} - 4.75V TO 5.25V
FAN-OUT FROM OUTPUT, N - 1 TO 10
ELECTRICAL CHARACTERISTICS, $T_A = 0^\circ\text{C}$ TO 70°C

NOTES A. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pin ① and ⑭.

B. All dimensions in inches unless otherwise noted.



PIN SPACING
SEE NOTE A

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
AND INCLUDE CHEMICALLY APPLIED
OR PLATED FINISHES

DECIMALS
X ± .05
.XX ± .01
.XXX ± .005

FRACTIONS
1/64
ANGLES
0° - 30°

MATERIAL

FINISH

SA01-265
(SN7430N)

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
	HOGAN		LIST OF MATERIAL	
	FINAL APPROVAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
	MECH. DES.			
	ELECT. DES.			
	CHECKED		NETWORK, 8-INPUT POSITIVE NANDGATE	
	DRAWN			

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SIZE
A

CODE IDENT. NO.
82679

DWG NO.
NW 164

SCALE

SHEET OF

ISSUE

A

APPLICATION

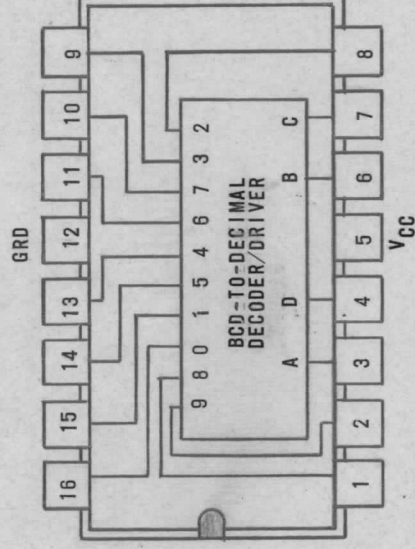
REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	3/12/68		C.V.		<i>[Signature]</i>
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		<i>[Signature]</i>

MFGR (TMC CODE NO): S401-265
 MFGR PART NUMBER: SN7441N
 MFGR CATALOG: INTERGRATED CIRCUITS
 1967-1968

RECOMMENDED OPERATING CONDITIONS
 SUPPLY VOLTAGE V_{CC} : 4.75V TO 5.25V
 MAX VOLTAGE AT ANY OUTPUT: 25V

POWER DISSIPATION: 95 mW
 MAX VOLTAGE ON ANY OUTPUT: 55 V
 (SUFFICIENT IF DRIVE GAS
 FILLED READOUT TUBES DIRECTLY)



POSITIVE LOGIC

- PURCHASING NOTE:** VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC.
1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
 2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOGS.

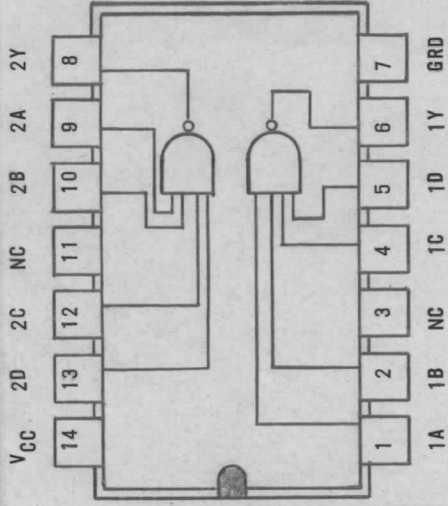
REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
NETWORK, BCD-T0-DECIMAL DECODER DRIVER			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FRACTIONS 1/64 ANGLES 0°-30'	DATE	
TOLS. 0°-30'		DATE	
MATERIAL			
FINISH			
ELECT. DES. <i>[Signature]</i> DATE 10-22-68		DATE	
CHECKED <i>[Signature]</i> DATE 10/17/68		DATE	
DRAWN <i>[Signature]</i> DATE 3-13-68		DATE	
SIZE A	CODE IDENT. NO. 82679	DWG NO. NW 165	ISSUE Ø
SCALE		SHEET	OF

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APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	3/12/68		C.V.		<i>[Signature]</i>
			Ø	ORIG. RELEASE FOR PROD.	10-22-68		R.G.		<i>[Signature]</i>
			A	DIM. OUTLINE ADDED	3/25/69	19351	C.V.		<i>[Signature]</i>



NC-NO INTERNAL CONNECTION
POSITIVE LOGIC
Y = ABCD

MFGR (TMC CODE NO): S4011-265
MFGR PART NUMBER: SN7420N
MFGR CATALOG: INTEGRATED CIRCUITS
1967-1968

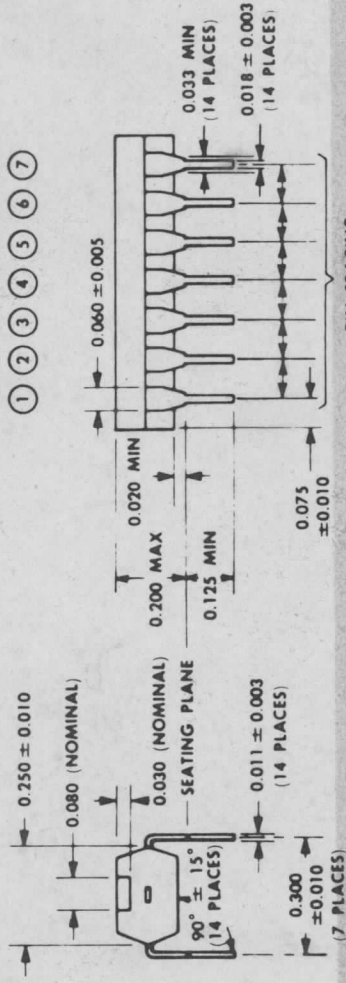
RECOMMENDED OPERATING CONDITIONS

SUPPLY VOLTAGE V_{CC} : 4.75V TO 5.25V
FAN-OUT FROM EACH OUTPUT, N: 1 TO 10

ELECTRICAL CHARACTERISTICS, $T_A = 0^\circ\text{C}$ TO 70°C

NOTES: A. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pin ① and ⑭.

B. All dimensions in inches unless otherwise noted.



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS
.X ± .05 TOLS.
.XX ± .01 ANGLES
.XXX ± .005 0°-30'

FRACTIONS
1/64

MATERIAL

FINISH

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
NETWORK, DUAL 4-INPUT POSITIVE NANDGATE			
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
A	82679	NW 166	A
SCALE		SHEET	OF

NOTICE TO PERSONS RECEIVING THIS DRAWING

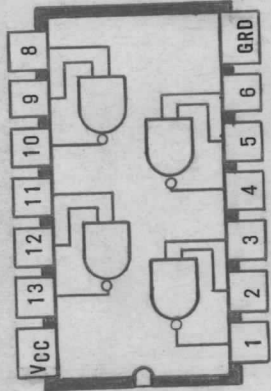
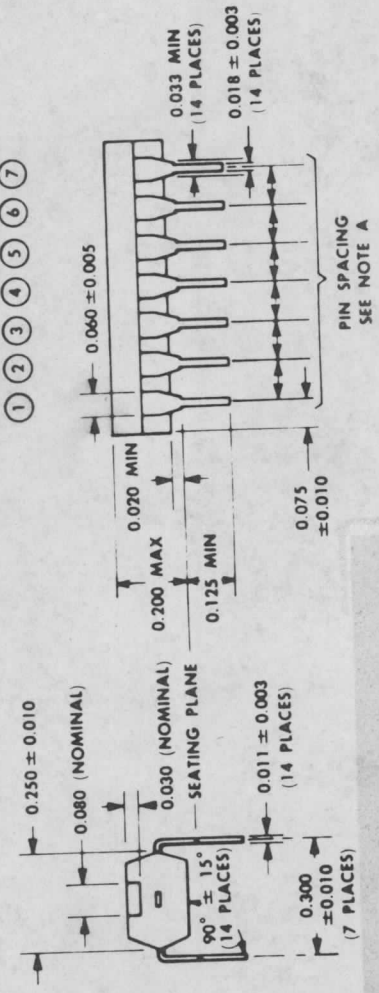
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REVISIONS

APPLICATION		REVISIONS		DESCRIPTION		DATE		E.M.N.NO		DRAFT		CHKD		APPD	
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION		DATE		E.M.N.NO		DRAFT		CHKD		APPD	
	HFSR-4		X	EXPERIMENTAL RELEASE		3/12/68				C.V.				Mde	
			Ø	ORIG. RELEASE FOR PROD.		10-22-68		Ø		R.G.				JAB	
			A	DIM. OUTLINE ADDED		3/24/69		19352		JA		JO		SP	

NOTES: A. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pin ① and ⑭.

B. All dimensions in inches unless otherwise noted.



PROPAGATION DELAY: 35 nsec

POWER DISSIPATION: 88 mW TOTAL FOR FOUR GATES (22 mW PER GATE)

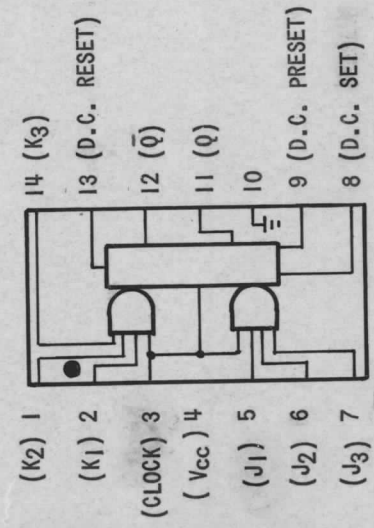
ELECTRICAL CHARACTERISTICS

TA = 0°C TO 70°C

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS	HOGAN			
.X ± .05	FINAL APPROVAL	DATE	LIST OF MATERIAL	
.XX ± .01	MECH. DES.	DATE	THE TECHNICAL MATERIEL CORP.	
.XXX ± .005	ELECT. DES.	DATE	MAMARONECK, NEW YORK	
1/64	CHECKED	DATE	NETWORK, QUADRUPLE 2-INPUT NANDGATE	
ANGLES	DRAWN	DATE	WITH OPEN COLLECTOR OUTPUT	
0°-30°	FINISH			
MATERIAL				
FINISH				
<p>NOTICE TO PERSONS RECEIVING THIS DRAWING</p> <p>THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.</p>				
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
A	82679	NW 167	A	
SCALE		SHEET	OF	

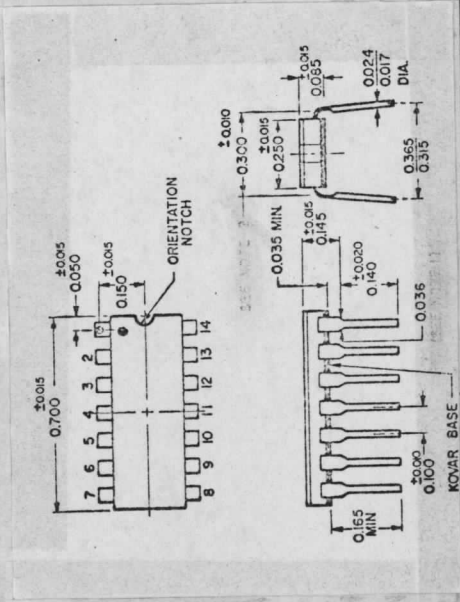
APPLICATION			REVISIONS						
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	4/2/68		C.V.		<i>[Signature]</i>
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		<i>[Signature]</i>
			A	PICTORIAL ADDED	2/17/69	19335	<i>[Signature]</i>		<i>[Signature]</i>

PAR (TMC CODE NO): 5401-424
 MFR PART NUMBER: SF203-03



$$Q_R + I = J_1 J_2 J_3 \bar{Q}_n + K_1 K_2 K_3 Q_n$$

VOLTAGE	MIN	TYP	MAX
SUPPLY			7.0 VOLTS
SUPPLY SURGE (1sec)			12 VOLTS
SUPPLY OPERATING	4.5	5.0	6.0 VOLTS
INPUT VOLTAGE			5.5 VOLTS
OUTPUT VOLTAGE			5.5 VOLTS
TEMPERATURE			
STORAGE	-65°C		+200°C
OPERATING (AMBIENT)	0°C		+75°C
POWER DISSIPATION (50% DUTY CYCLE, Vcc = +5v)		60	mW

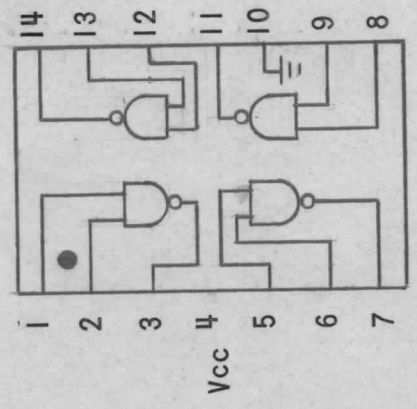


REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
HOGAN			
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
50 MHZ AND INPUT J-K FLIP-FLOP			
FINAL APPROVAL	DATE	SIZE	CODE IDENT. NO.
MECH. DES.	DATE	A	82679
ELECT. DES.	DATE	SCALE	DWG NO.
CHECKED	DATE		NW 168
DRAWN	DATE		ISSUE
			A
MATERIAL			OF
FINISH			SHEET
5401-424 (SF203-03)			OF

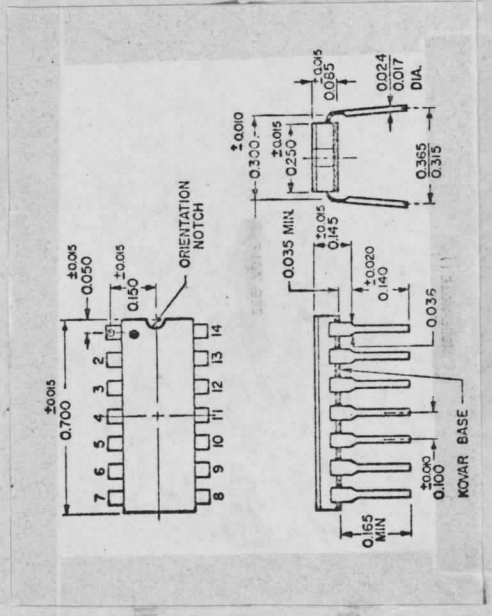
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APPLICATION			REVISIONS						
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	5/3/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		
			A	MFR P/N WAS SM223-03	12/11/68	C.C.	C.V.		
			B	PICTORIAL ADDED	2/17/69	19335	JA		

MFGR (TMC CODE NO): S401-424
 MFGR PART NUMBER: SG 223-03



VOLTAGE	MIN	TYP	MAX
SUPPLY SURGE (1sec)			7.0 VOLTS
SUPPLY OPERATING	4.5	5.0	12 VOLTS
INPUT			6.0 VOLTS
OUTPUT			5.5 VOLTS
TEMPERATURE			
STORAGE	-65°		+200°C
OPERATING (AMBIENT)	0°		+75°C



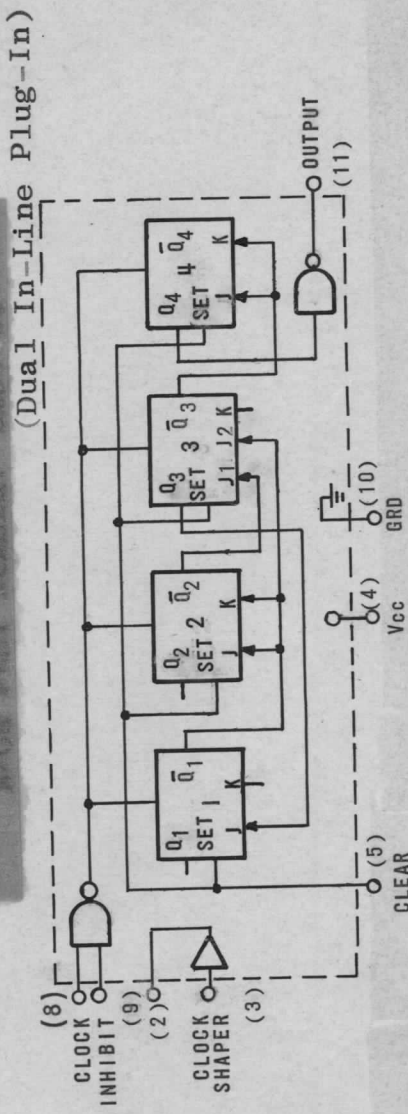
REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
NAND/NOR GATE			
HOGAN		DATE	ISSUE
FINAL APPROVAL		DATE	NW 169
MECH. DES.		DATE	
ELECT. DES.		DATE	
CHECKED		DATE	
DRAWN		DATE	
MATERIAL		SIZE	DWG NO.
FINISH		A	82679
		SCALE	SHEET
			OF

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS FRACTIONS
 .X ± .05 1/64
 .XX ± .01 ANGLES
 .XXX ± .005 0°-30°

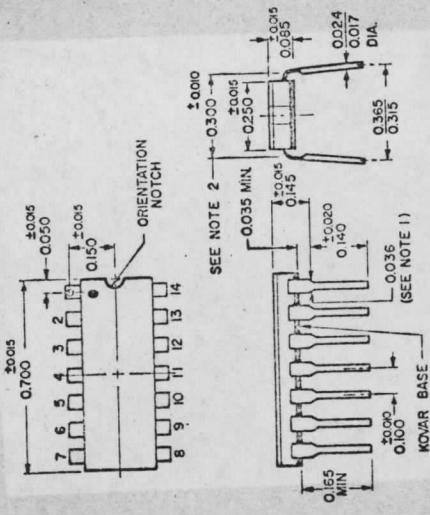
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APPLICATION		REVISONS							
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	3/29/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		
			A	PICTORIAL ADDED	2/17/69	19335			
			B	MFR P/N REVISED	10/14/69	19616	CV		



PERFORMANCE CHARACTERISTICS

CHARACTERISTICS	TYPICAL VALUE
DIGITAL INPUT	Dc TO 30 MHz
ANALOG INPUT	5 Hz TO 30 MHz
OUTPUT	SYMMETRICAL SQUARE WAVE 1/10 INPUT FREQUENCY.
PROPAGATION DELAY	24 ns
LOGIC SWING	0.25 VOLTS
OUTPUT LOGIC "0"	3.3 VOLTS
OUTPUT LOGIC "1"	±1 VOLT
NOISE IMMUNITY	120 mW
POWER DISSIPATION	6 TO 15
FAN OUT	-55°C TO +125°C (SM50,51)
OPERATING TEMPERATURE	



NOTES:
 1. THIS DIMENSION IS A REFERENCE POINT AT WHICH THE TAPER IN THE LEAD IS 0.15° WIDE.
 2. THIS DIMENSION IS THE DISTANCE BETWEEN LEAD CENTER LINES WITH LEADS PERPENDICULAR TO THE BASE OF THE PACKAGE.

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.																				
HOGAN		LIST OF MATERIAL																					
<table border="1"> <tr> <td>FINAL APPROVAL</td> <td>DATE</td> <td></td> </tr> <tr> <td>MECH. DES.</td> <td>DATE</td> <td></td> </tr> <tr> <td>ELECT. DES.</td> <td>DATE</td> <td>10-22-68</td> </tr> <tr> <td>CHECKED</td> <td>DATE</td> <td></td> </tr> <tr> <td>DRAWN</td> <td>DATE</td> <td>3/2/68</td> </tr> </table>				FINAL APPROVAL	DATE		MECH. DES.	DATE		ELECT. DES.	DATE	10-22-68	CHECKED	DATE		DRAWN	DATE	3/2/68					
FINAL APPROVAL	DATE																						
MECH. DES.	DATE																						
ELECT. DES.	DATE	10-22-68																					
CHECKED	DATE																						
DRAWN	DATE	3/2/68																					
<table border="1"> <tr> <td colspan="2">UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES</td> <td colspan="2">THE TECHNICAL MATERIEL CORP.</td> </tr> <tr> <td>DECIMALS</td> <td>FRACTIONS</td> <td colspan="2">MAMARONECK, NEW YORK</td> </tr> <tr> <td>.X ± .05</td> <td>1/64</td> <td colspan="2"></td> </tr> <tr> <td>.XX ± .01</td> <td>ANGLES</td> <td colspan="2"></td> </tr> <tr> <td>.XXX ± .005</td> <td>0°-30'</td> <td colspan="2"></td> </tr> </table>				UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		THE TECHNICAL MATERIEL CORP.		DECIMALS	FRACTIONS	MAMARONECK, NEW YORK		.X ± .05	1/64			.XX ± .01	ANGLES			.XXX ± .005	0°-30'		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		THE TECHNICAL MATERIEL CORP.																					
DECIMALS	FRACTIONS	MAMARONECK, NEW YORK																					
.X ± .05	1/64																						
.XX ± .01	ANGLES																						
.XXX ± .005	0°-30'																						
MATERIAL																							
FINISH																							
<table border="1"> <tr> <td colspan="2">DECADA DIVIDER</td> <td>SIZE</td> <td>CODE IDENT. NO.</td> <td>DWG NO.</td> <td>ISSUE</td> </tr> <tr> <td colspan="2"></td> <td>A</td> <td>82679</td> <td>NW 170</td> <td>B</td> </tr> </table>				DECADA DIVIDER		SIZE	CODE IDENT. NO.	DWG NO.	ISSUE			A	82679	NW 170	B								
DECADA DIVIDER		SIZE	CODE IDENT. NO.	DWG NO.	ISSUE																		
		A	82679	NW 170	B																		
<table border="1"> <tr> <td>SCALE</td> <td>SHEET</td> <td>OF</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>				SCALE	SHEET	OF																	
SCALE	SHEET	OF																					

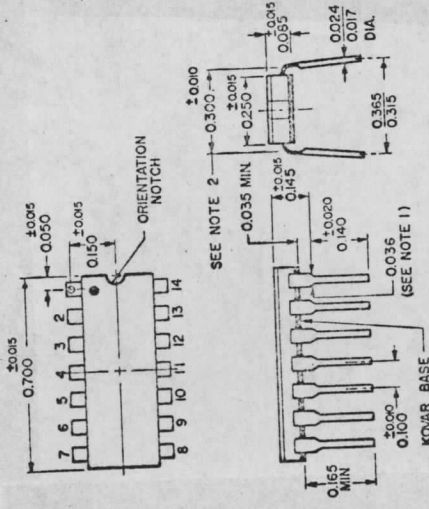
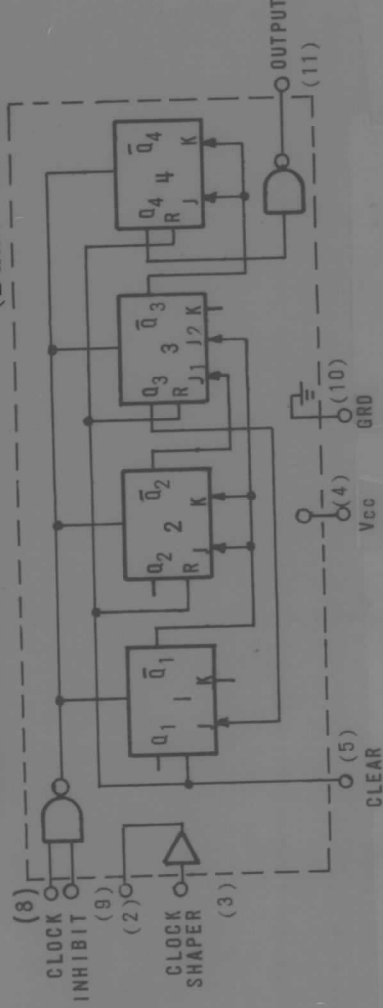
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APPLICATION

REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFR-4		X	EXPERIMENTAL RELEASE	3/29/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD	10-22-68		R.G.		
			A	PICTORIAL ADDED	2/17/69	19335			
			B	MFR DESCRIPTION ADDED	6/4/69	19616		CV	

(Dual In-Line Plug-In)



NOTES:
 1. THIS DIMENSION IS A REFERENCE POINT AT WHICH THE TAPER IN THE LEAD IS 0.035 WIDE.
 2. THIS DIMENSION IS THE DISTANCE BETWEEN LEAD CENTER LINES WITH LEADS PERPENDICULAR TO THE BASE OF THE PACKAGE.

PERFORMANCE CHARACTERISTICS

CHARACTERISTICS
 DIGITAL INPUT
 ANALOG INPUT
 OUTPUT

PROPAGATION DELAY
 LOGIC SWING
 OUTPUT LOGIC "0"
 OUTPUT LOGIC "1"
 NOISE IMMUNITY
 POWER DISSIPATION
 FAN OUT
 OPERATING TEMPERATURE

TYPICAL VALUE
 Dc TO 30 MHZ
 5 HZ TO 30 MHZ
 SYMMETRICAL SQUARE WAVE I/O
 INPUT FREQUENCY
 24 ns
 0.25 VOLTS
 3.3 VOLTS
 ±1 VOLT
 120 mW
 6 TO 15
 0°C TO +75°C (SM92,93)

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.		
LIST OF MATERIAL					
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK					
FINAL APPROVAL	DATE	DECADE DIVIDER	NW 171		
MECH. DES.	DATE				
ELECT. DES.	DATE				
CHECKED	DATE				
DRAWN	DATE	SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
		A	82679		B
MATERIAL		SCALE	SHEET	OF	
FINISH					

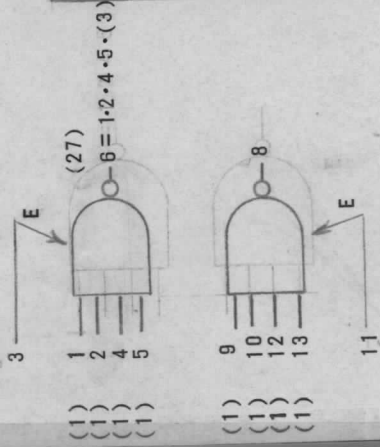
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APPLICATION

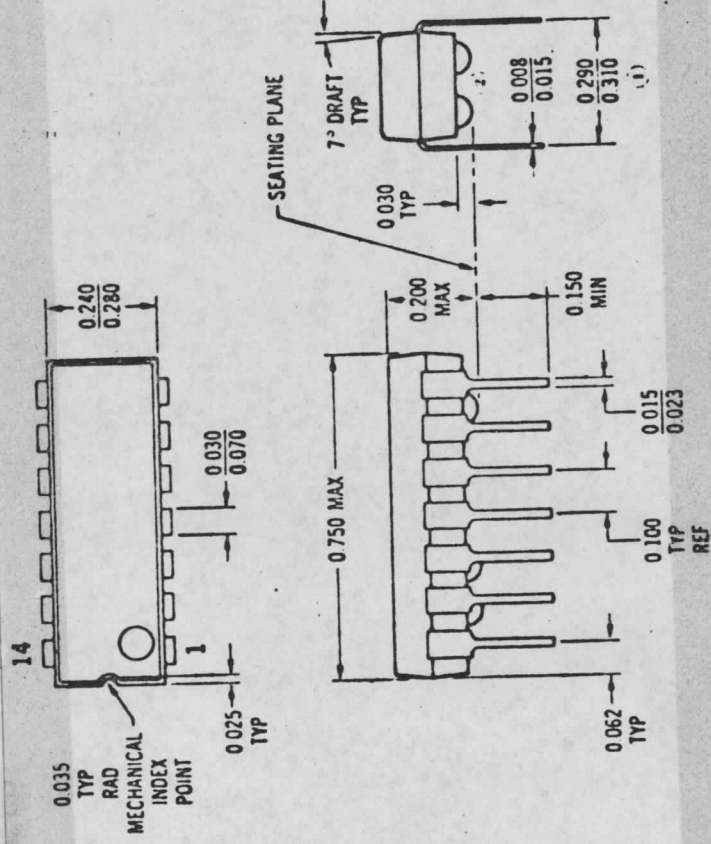
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RTTD-4		X	EXPERIMENTAL RELEASE	6/17/68		C.V.		<i>Joc</i>
			Ø	ORIG. RELEASE FOR PROD.		Ø	R.G.		<i>Joc</i>
			A	DIM. OUTLINE ADDED	3/24/69	19352	CU		<i>Joc op</i>

REVISIONS

MFGR (TMC CODE #): S401-302
 MFGR PART NUMBER: MC844P
 CASE TYPE: #93



MAXIMUM RATINGS	VALUE	UNIT
SUPPLY VOLTAGE CONTINUOUS PULSED, < 1 SECOND	+8 +12	Vdc
OUTPUT CURRENT (INTO OUTPUTS) CONTINUOUS PULSED, < 30 SECONDS	150 300	mADC
OPERATING TEMPERATURE RANGE:	0° TO +75°C	



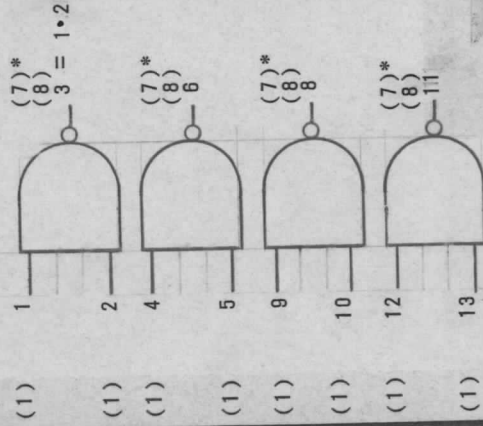
REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
S. DE MARCO				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			LIST OF MATERIAL	
DECIMALS	FRACTIONS	DATE		
.X ± .05 .XX ± .01 .XXX ± .005	1/64 ANGLES 0° .30'	DATE 10-30-68 DATE 10-28-68 DATE 6-17-68		
MATERIAL			THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
FINISH			DUAL 4 INPUT POWER GATE NAND/NOR	
S401-302 (MC844P)			SIZE A	SCALE
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed herein. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown herein without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.			CODE IDENT. NO. DWG NO.	ISSUE
			82679	NW 172
				SHEET OF

APPLICATION

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RTTD-4		X	EXPERIMENTAL RELEASE	6/17/68		C.V.		<i>HO</i>
			Ø	ORIG. RELEASE FOR PROD.	10/30/68	Ø	R.G.		<i>HO</i>
			A	DIMENSIONAL OUTLINE ADDED	3/24/69	19352	<i>HO</i>		<i>HO</i>

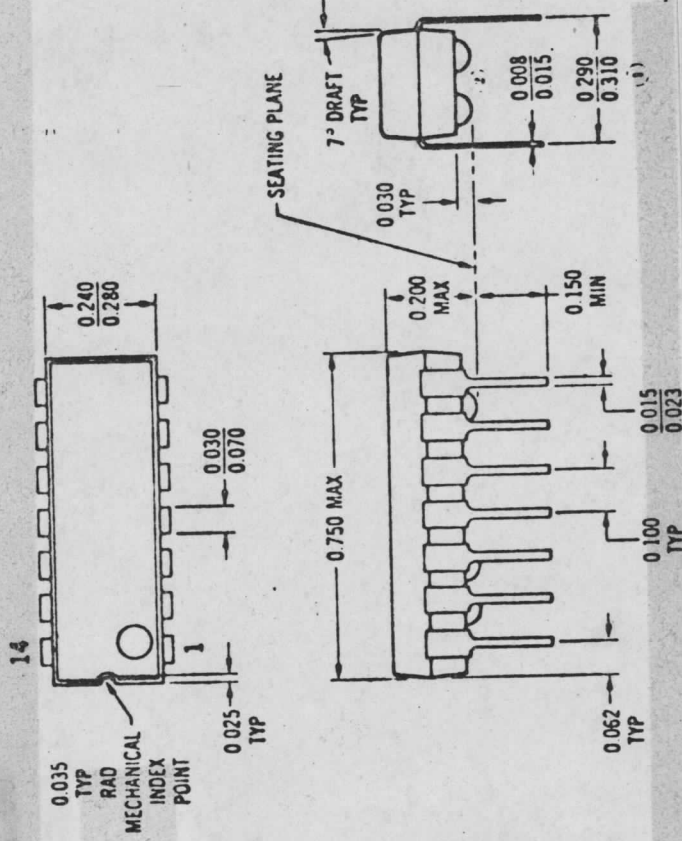
REVISIONS

MFGR (TMC CODE#): S401-302
 MFGR PART NUMBER: MC846P
 CASE TYPE: #93



* APPLIES TO MC849F,
 MC849P, MC949F

MAXIMUM RATINGS	VALUE	UNIT
SUPPLY VOLTAGE CONTINUOUS	+8	Vdc
PULSED, < 1 SECOND	+12	
OUTPUT CURRENT (INTO OUTPUTS)	30	
OPERATING TEMPERATURE RANGE:	0° TO +75°C	



REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
S. DE MARCO			
FINAL APPROVAL	DATE	LIST OF MATERIAL THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK QUAD 2 INPUT GATE NAND/NOR	
MECH. DES.	DATE 10/30/68		
ELECT. DES.	DATE 10/28/68		
CHECKED	DATE		
DRAWN	DATE		
S401-302 (MC846P)		SIZE A	CODE IDENT. NO. 82679
		SCALE	DWG NO. NW 173
			ISSUE A

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REVISIONS

APPLICATION

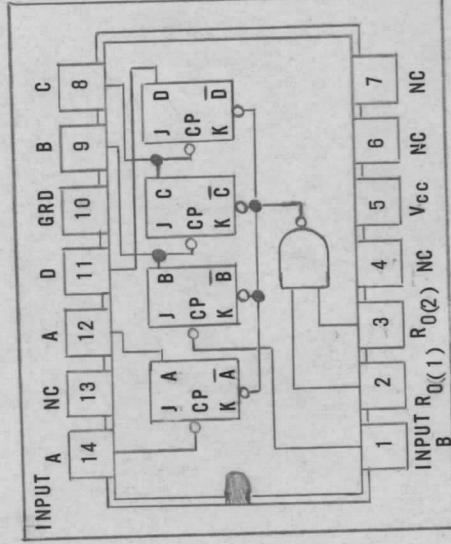
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	7-25-68		R.G.		
			Ø	ORIG. RELEASE FOR PROD.	10-22-68	Ø	R.G.		

MFGR (TMC CODE NO.): S401-265
 MFGR P/N: SN 7493N
 MFGR CATALOG REF.: SC-9437A (FEB. 1967)

RECOMMENDED OPERATING CONDITIONS

- SUPPLY VOLTAGE V_{CC}
4.5V TO 5.5V
- FAN-OUT FROM EACH OUTPUT
1 TO 10
- WIDTH OF INPUT COUNT PULSE, t_p (in)
 ≥ 50 ns
- WIDTH OF RESET PULSE, $t_{p(\text{reset})}$
 ≥ 50 ns

ELECTRICAL CHARACTERISTICS,
 $T_A = 0^\circ\text{C TO } 70^\circ\text{C}$



PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING ITEM TO TMC.

1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOGS.

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK				
NETWORK, 4-BIT BINARY COUNTER				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES				
DECIMALS	FRACTIONS			
.X ± .05	1/64			
.XX ± .01	ANGLES			
.XXX ± .005	0° - 30'			
MATERIAL				
FINISH				
FINAL APPROVAL	DATE			
MECH. DES.	DATE			
ELECT. DES.	DATE			
CHECKED	DATE			
DRAWN	DATE			
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
A	82679	NW 174	Ø	
SCALE		SHEET	OF	

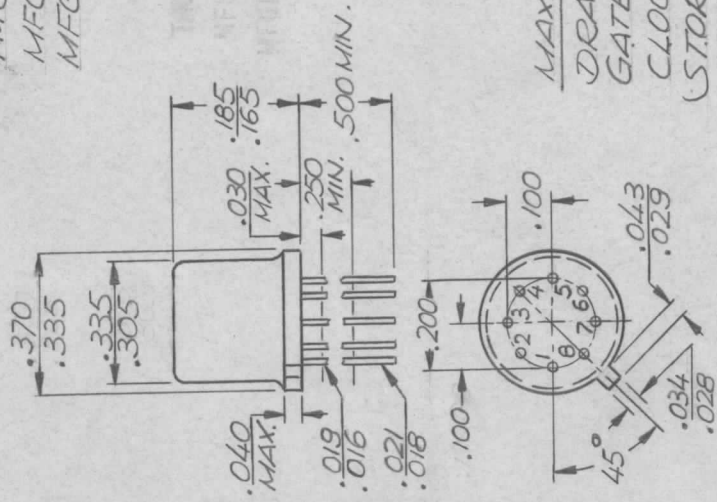
NOTICE TO PERSONS RECEIVING THIS DRAWING
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APPLICATION

QTY	MODEL USED ON	ASSY NO.	LTR
	RTMU-4		X

REVISIONS

DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
EXPERIMENTAL RELEASE	8/15/68		C.V.	<i>[Signature]</i>	<i>[Signature]</i>
ORIG. RELEASE FOR PROD.		Ø	R.G.		<i>[Signature]</i>
PICT. & TERM CHART ADD.	9/22/69	19588	K.L.N.D		50 2nd



TMC PART NUMBER: NW 175
 MFR PART NUMBER: MEM 31032
 MFR (TMC CODE NO.): S 401 - 333

TERMINALS	
P/N	FUNCTION
1	OUTPUT
2	V0
3	VDD
4	VGG
5	GROUN D
6	INPLT
7	CLOCK(Ø)
8	GROUN D

MAXIMUM RATINGS
 DRAIN VOLTAGE(-VDD) = -30VOLTS TO +0.3 VOLT
 GATE VOLTAGE(-VGG) = -30 VOLTS TO +0.3 VOLT
 CLOCK & DATA INPUT VOLT. = -30VOLTS TO +0.3VOLT
 STORAGE TEMPERATURE = -55°C TO +150°C
 OPERATING TEMPER. RANGE= -55°C TO +85°C

PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC.

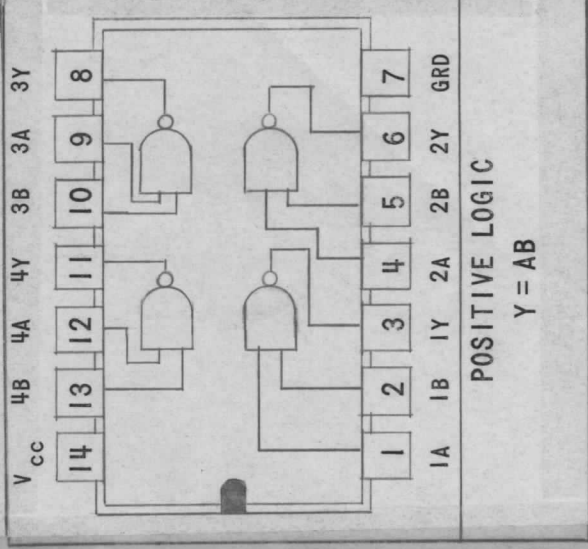
1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOGS.

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
SHIFT, REGISTER 32 BIT			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES DECIMALS FRACTIONS .X ± .05 TOLS. 1/64 .XX ± .01 ANGLES 0°-30' .XXX ± .005			
MATERIAL			
FINISH			
FINAL APPROVAL MECH. DES. ELECT. DES. CHECKED DRAWN	DEMARCO DATE 8/15/68 DATE 8/15/68 DATE 8/15/68 DATE DATE 8/15/68		
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.		SIZE A	CODE IDENT. NO. 82679
		DWG NO. NW 175	ISSUE A
		SCALE	SHEET OF

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	9/6/68		C.V.	<i>[Signature]</i>	
			Ø	ORIG. RELEASE FOR PROD.	10-27-68	Ø	R.G.	<i>[Signature]</i>	
			A	DIM. OUTLINE ADDED	3/25/69	19351	CV	<i>[Signature]</i>	



RECOMMENDED OPERATING CONDITIONS:

SUPPLY VOLTAGE V_{CC} : 4.75V TO 5.25V

ELECTRICAL CHARACTERISTICS:

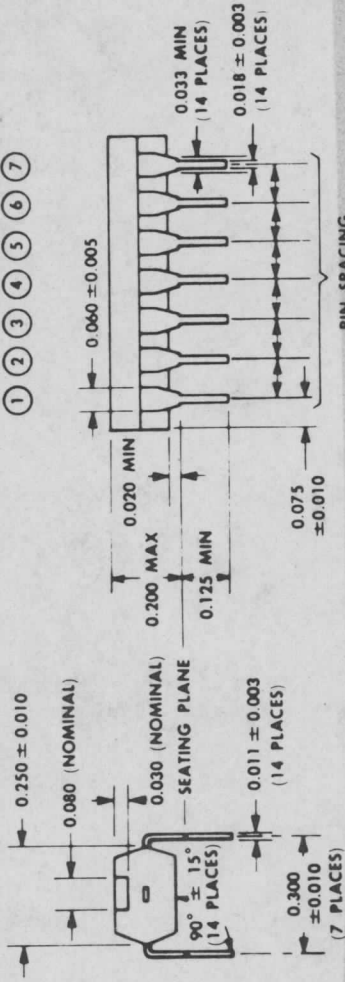
$T_A = 0^\circ\text{C TO } 70^\circ\text{C}$

POSITIVE LOGIC

Y = AB

NOTES: A. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pin ① and ⑭.

B. All dimensions in inches unless otherwise noted.



PIN SPACING
SEE NOTE A

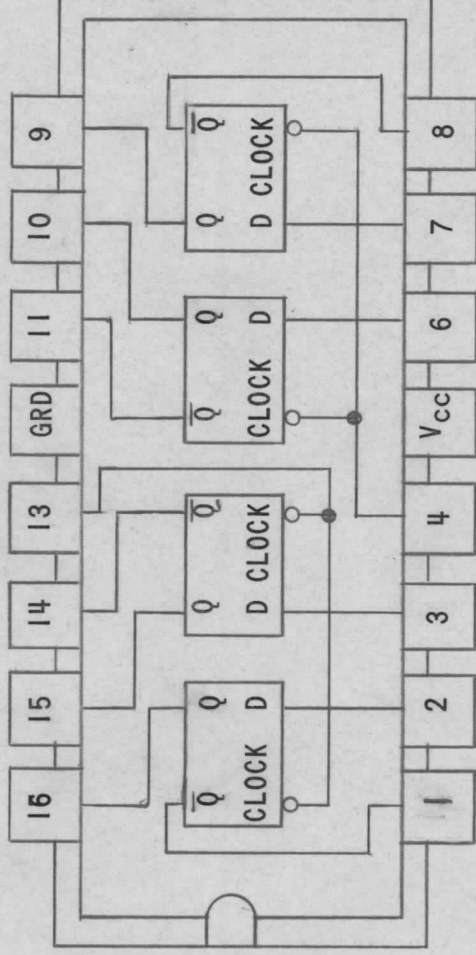
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYMBOL
DECIMALS	S. DEMARCO		LIST OF MATERIAL	
FRACTIONS			THE TECHNICAL MATERIEL CORP.	
.X ± .05 TOLS.	FINAL APPROVAL		MAMARONECK, NEW YORK	
.XX ± .01 ANGLES	MECH. DES.		NETWORK, QUADRUPLE 2-INPUT	
.XXX ± .005	ELECT. DES.		POSITIVE NANDGATE	
MATERIAL	CHECKED			
FINISH	DRAWN			
S401-265 (SN7400N)	DATE			
	DATE			
	DATE			
	DATE			
	DATE			
	SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
	A	82679	NW 176	A
	SCALE		SHEET	OF

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APPLICATION		REVISIONS							
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	HFRR-4		X	EXPERIMENTAL RELEASE	8/22/68		C.V.		
			Ø	ORIG. RELEASE FOR PROD.	8/28/68	Ø	R.G.		
			A	S401-265 WAS S401-424	1/24/69	C.C.	C.V.		

MFGR (TMC CODE NO): S401-265

MFGR PART NUMBER: SN7475N



PURCHASING NOTE: VENDOR MUST INCLUDE THE FOLLOWING INFORMATION WHEN SHIPPING THIS ITEM TO TMC.

1. AN OUTLINE DRAWING OR ILLUSTRATION FROM CATALOG SHOWING ALL PERTINENT DIMENSIONS AND TOLERANCES.
2. ELECTRICAL AND/OR MECHANICAL SPECIFICATIONS AS SHOWN IN THEIR CATALOG

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	FINAL APPROVAL		LIST OF MATERIAL	
FRACTIONS 1/64	MECH. DES.		THE TECHNICAL MATERIEL CORP.	
TOLS. ANGLES 0°-30'	ELECT. DES.		MAMARONECK, NEW YORK	
MATERIAL	CHECKED		NETWORK, QUADRUPLE BISTABLE LATCH	
FINISH	DRAWN			
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.	DATE	DATE	DATE	DATE
	8-26-68			
SIZE	CODE IDENT. NO.	DWG NO.	ISSUE	
A	82679	NW 177	A	
SCALE		SHEET	OF	

THE CONTENTS OF THIS DRAWING ARE THE EXCLUSIVE PROPERTY OF THE TECHNICAL MATERIEL CORP. ITS UNAUTHORIZED USE FOR REPRODUCTION IN WHOLE OR IN PART IS STRICTLY FORBIDDEN.

REQ. PER UNIT

USED ON

MODEL

ASS'Y. NO.

DATE

PALA-10K

AX5094

1-26-70

NW 179

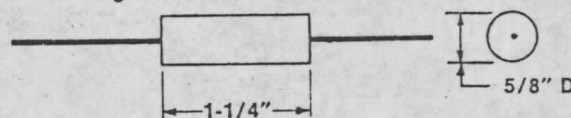
A

Characteristics

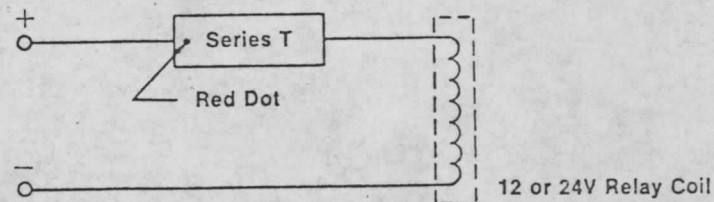
Operating Voltage	12 & 24V DC	①
Operating Mode	Delay on energize	
Standard Fixed Delays	.5, 1, 2, 5, 10, 20, 30 sec.	②
Repeatability	3%	
Recycle Time	3% of rated delay for 0-5% max. delay change	
Operating Temp. Range	-10°C to +60°C	
Duty Factor	Continuous	
Timing Accuracy	±5%	
Contact Rating	Depends on ext. relay used	
Case	Black epoxy	
Mounting	Wires to circuit cable or component clamp.	
Max Current	170 mAmps	

Dimensions

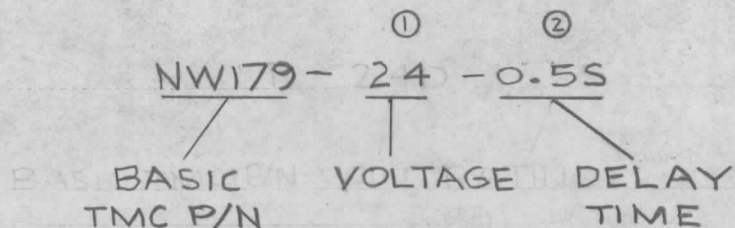
Lead Length = 1-1/2" min.



Wiring Diagram



NO LONGER USED
REPLACED BY NW 183-24.5

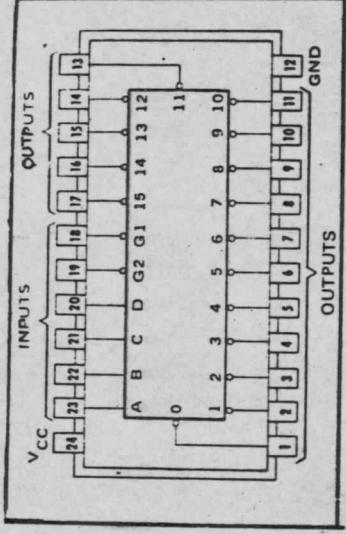


SYM	DESCRIPTION	DATE	CH. NO.	DRAFTS	CHECKER	ENG. APP.	REQ. ITEM	PART NO.	DESCRIPTION	SYMBOL		
A	ADD NOTE "NO LONGER USED REPLACE BY NW 183-24.5"	3-13-74	21153	SDL					THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK NETWORK, TIME DELAY	A		
Ø	ORIGINAL RELEASE	1/29/70		W				STOCK SIZE				
X	EXPERIMENTAL RELEASE	1-26-70		KD				MATERIAL				
								TYPE & TEMPER HEAT TREAT. SPEC.				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		SCALE		//					Drawn: Deiterlein	Checked: [Signature]	FINAL APPROVAL: [Signature] 1/29/70	
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	TOLERANCES	FRACTIONS ± 1/64 ANGLES ± 0° 30'	CODE	S401-511					FINISH & SPEC. NO.	ELEC. DES. APP. [Signature]	MECH. DES. APP. [Signature]	NW 179

APPLICATION

REVISIONS

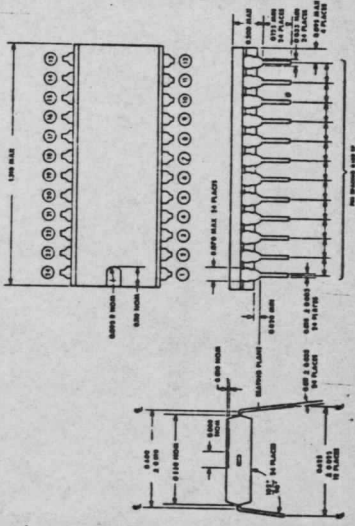
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSL-1		Ø	ORIGINAL RELEASE	12-8-72		EP		



POSITIVE LOGIC

24-PIN N PLASTIC
DUAL-IN-LINE PACKAGE OUTLINE

NOTES: a. Each pin centerline is located within 0.010 of its true longitudinal position.
b. All dimensions are in inches unless otherwise noted.



RECOMMENDED OPERATING CONDITIONS:
SUPPLY VOLTAGE V_{CC}: 4.75V TO 5.25V
ELECTRICAL CHARACTERISTICS:
T_A - 0°C TO 70°C

5401-265 (SN 74154N)

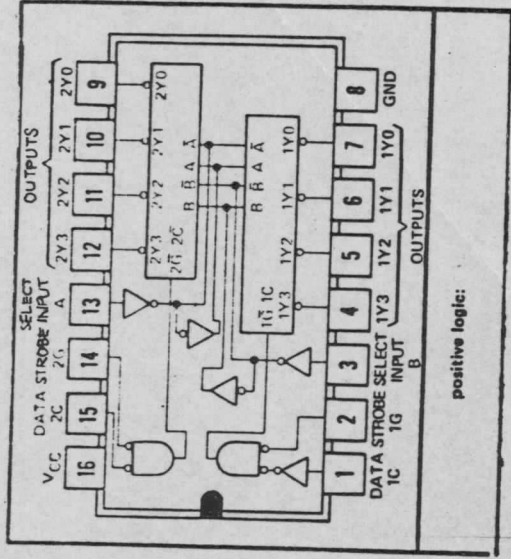
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.					
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	O. POSE	LIST OF MATERIAL	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK						
FRACTIONS 1/64									
TOLS. ANGLES 0° - 30°									
MATERIAL									
FINISH									
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.	FINAL APPROVAL	DATE	DATE	DATE	DATE	DATE	DATE	DATE	
	MECH. DES.								
	ELECT. DES.								
	CHECKED								
	DRAWN	GE							
SIZE A	CODE IDENT. NO. 82679	DWG NO. NW 185	ISSUE Ø						
SCALE	SHEET	OF							

NETWORK, 4 LINE TO 16 LINE
DECODER/DEMULTIPLEXER

REVISIONS

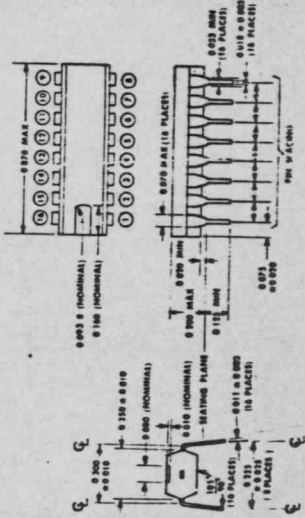
APPLICATION

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	12-872		EF		



RECOMMENDED OPERATING CONDITIONS:
 SUPPLY VOLTAGE Vcc: 4.75V TO 5.25V
 ELECTRICAL CHARACTERISTICS:
 TA = 0°C TO 70°C

16-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE



NOTES: a. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pins 1 and 16.
 b. All dimensions are in inches unless otherwise noted.

5401-265 (SN74155N)

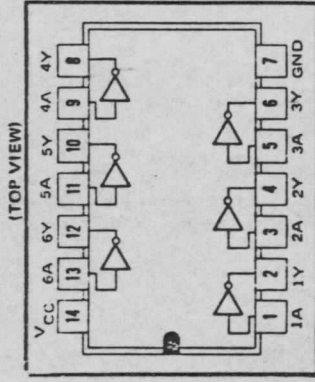
REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
THE TECHNICAL MATERIEL CORP.				
MAMARONECK, NEW YORK				
NETWORK, DUAL 2 LINE TO 4 LINE DECODER/DEMULTIPLEXER				
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES				
DECIMALS				
.X ± .05				
.XX ± .01				
.XXX ± .005				
FRACTIONS				
1/64				
TOLS.				
ANGLES				
0° - 30'				
MATERIAL				
FINISH				
SIZE	A	CODE IDENT. NO.	82679	DWG NO.
SCALE				
ISSUE			11/186	Ø
				OF
				SHEET

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APPLICATION

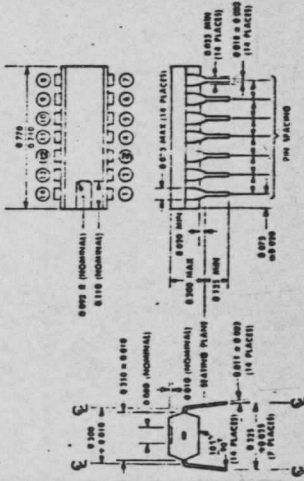
REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	12-8-72		EF		



RECOMMENDED OPERATING CONDITIONS:
 SUPPLY VOLTAGE V_{CC}: 4.75V TO 5.25V
 ELECTRICAL CHARACTERISTICS:
 T_A = 0°C TO 70°C

14-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE



NOTES: a. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ±0.010 of its true longitudinal position relative to pins ④ and ⑪.
 b. All dimensions are in inches unless otherwise noted.

5401-265 (SN7404N)

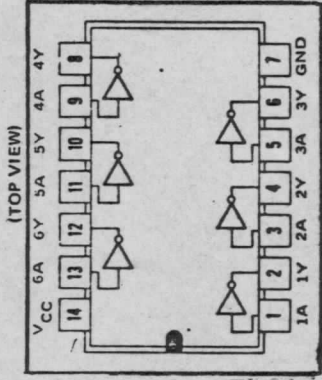
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS		LIST OF MATERIAL			
FRACTIONS		THE TECHNICAL MATERIEL CORP.			
.X ± .05		MAMARONECK, NEW YORK			
.XX ± .01		NETWORK, HEX INVERTERS			
.XXX ± .005		DATE 12-7-72			
TOLS.		SCALE			
ANGLES		SIZE			
0°-30°		A			
MATERIAL		CODE IDENT. NO.			
FINISH		82679			
DRAWN CE		DWG NO.			
CHECKED		NW187			
ELECT. DES.		ISSUE			
MECH. DES.		Ø			
FINAL APPROVAL		OF			
DATE		SHEET			

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APPLICATION

REVISIONS

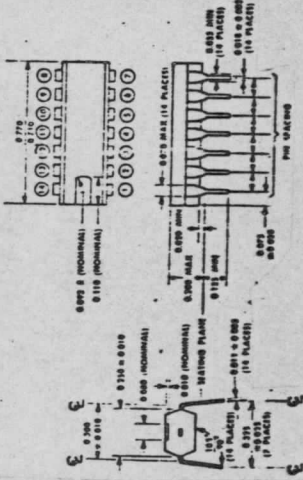
QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	12-8-72		EP		



POSITIVE LOGIC $I = \bar{A}$

RECOMMENDED OPERATING CONDITIONS:
SUPPLY VOLTAGE Vcc: 4.75V TO 5.25V
ELECTRICAL CHARACTERISTICS:
TA = 0°C TO 70°C

14-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE



NOTES: a. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pins 4 and 11.

b. All dimensions are in inches unless otherwise noted.

5401-265 (SN7405N)

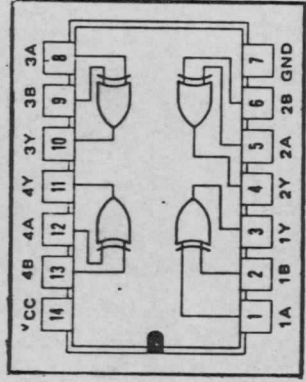
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES		REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS					
.X ± .05					
.XX ± .01					
.XXX ± .005					
FRACTIONS					
1/64					
ANGLES					
0°-30'					
MATERIAL		LIST OF MATERIAL			
		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
FINISH		NETWORK, HEX INVERTER (OPEN COLLECTOR OUTPUT)			
		SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
		A	82679	KW188	Ø
		SCALE		SHEET	OF

NOTICE TO PERSONS RECEIVING THIS DRAWING
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REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	12-8-72		Ø		

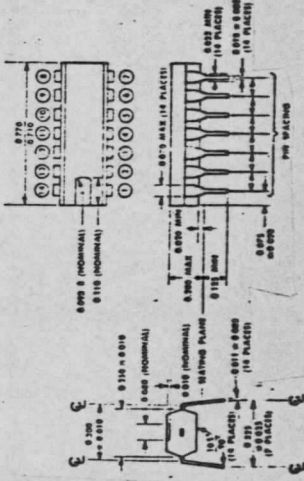
TOP VIEW



RECOMMENDED OPERATING CONDITIONS:
SUPPLY VOLTAGE V_{CC}: 4.75V TO 5.25V
ELECTRICAL CHARACTERISTICS:
T_A = 0°C TO 70°C

POSITIVE LOGIC Y = A ⊕ B

14-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE



NOTES: a. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ±0.010 of its true longitudinal position relative to pins ④ and ⑪.
 b. All dimensions are in inches unless otherwise noted.

S401-265(SN74L86N)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005	0. POSE		LIST OF MATERIAL	
FRACTIONS 1/64 ANGLES 0°-30'	FINAL APPROVAL		THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
MATERIAL	MÉCH. DES.		NETWORK, QUADRUPLE 2-INPUT EXCLUSIVE OR GATED	
FINISH	ELECT. DES.			
	CHECKED			
	DRAWN	GE		
	DATE	12/12		
	DATE			
	DATE			
	DATE			
	DATE			
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.	SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
	A	82679	NW189	Ø
	SCALE		SHEET	OF

REVISIONS

APPD

DRAFT

E.M.N.NO

DATE

DESCRIPTION

LTR

ASS'Y NO.

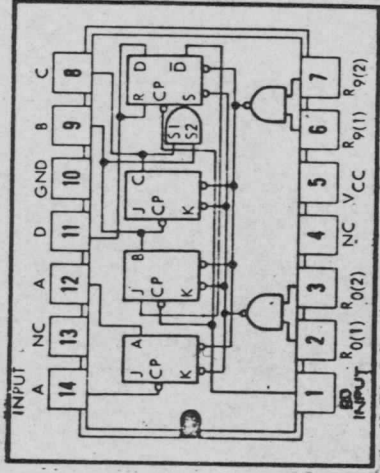
QTY

12-8-72

ORIGINAL RELEASE

Ø

RSU-I



RECOMMENDED OPERATING CONDITIONS:

SUPPLY VOLTAGE V_{CC}: 4.75V TO 5.25V

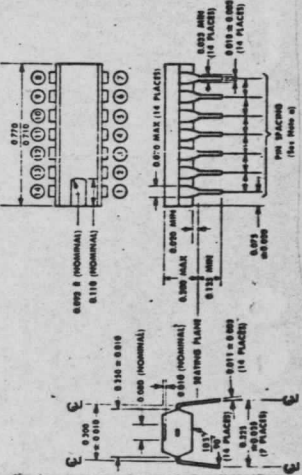
ELECTRICAL CHARACTERISTICS:

TA = 0°C TO 70°C

14-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE

NOTES: a. The true-position pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pins **④** and **⑪**.

b. All dimensions are in inches unless otherwise noted.



5401-265(SN 7490N)

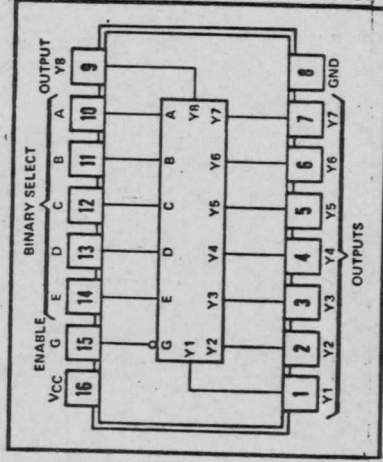
REQ'D	ITEM	PART	NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL					
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK					
NETWORK, DECADE, COUNTER					
SIZE	CODE IDENT. NO.		DWG NO.		
A	82679		NW 190		
SCALE			SHEET	OF	
				ISSUE	
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REVISIONS

APPLICATION

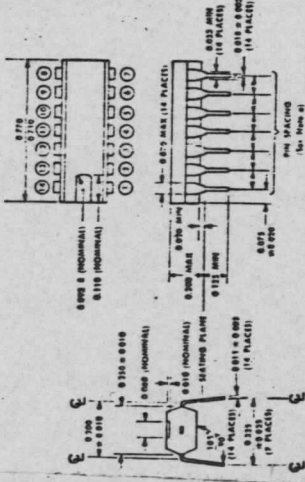
QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU1		Ø	ORIGINAL RELEASE	12-872		EP		

TOP VIEW



POSITIVE LOGIC

14-PIN PLASTIC DUAL-IN-LINE N-PACKAGE OUTLINE



- NOTES: a. The true position, pin spacing is 0.100 between centerlines. Each pin centerline is located within ± 0.010 of its true longitudinal position relative to pins 4 and 11.
- b. All dimensions are in inches unless otherwise noted.

RECOMMENDED OPERATING CONDITIONS:

SUPPLY VOLTAGE Vcc: 4.75V TO 5.25V

ELECTRICAL CHARACTERISTICS:
TA = 0°C TO 70°C

SH401-265-(SU74184N)

REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL			
THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
NETWORK, BCD-TO-BINARY CONVERTER			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES			
DECIMALS	FRACTIONS		
.X \pm .05	1/64		
.XX \pm .01	TOLS.		
.XXX \pm .005	ANGLES		
	0° - 30'		
MATERIAL			
FINISH			
SIZE A	CODE IDENT. NO. 82679	DWG NO. NW191	ISSUE Ø
SCALE			SHEET OF

0. ROSE

FINAL APPROVAL
MECH. DES.
ELECT. DES.
CHECKED
DRAWN GE

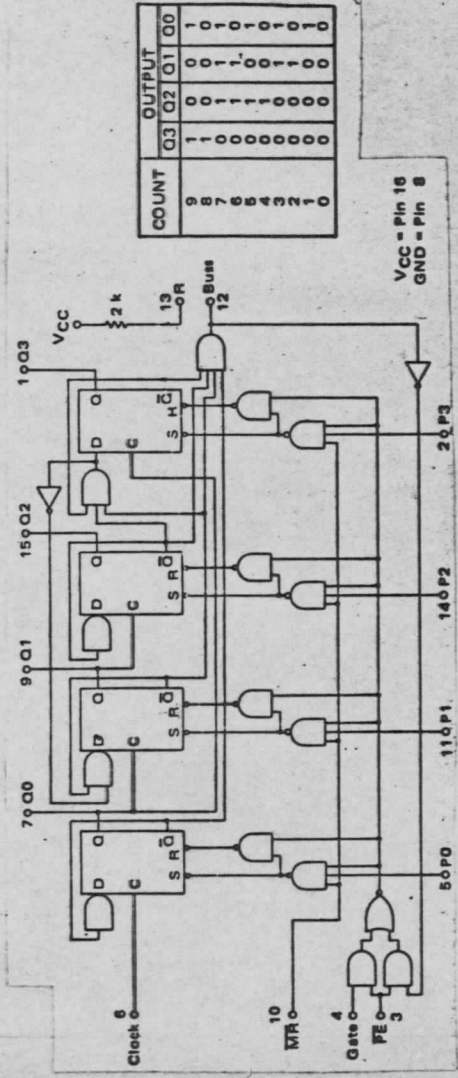
DATE 12/7/72

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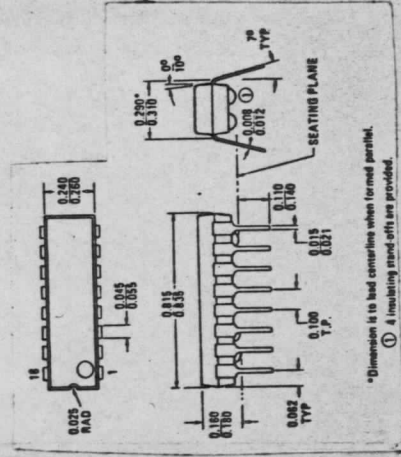
APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	12-8-72				



COUNT	OUTPUT			
	Q3	Q2	Q1	Q0
9	1	0	0	1
8	1	0	1	0
7	0	0	1	1
6	0	1	0	0
5	0	1	0	1
4	0	0	0	0
3	0	0	0	1
2	0	0	1	0
1	0	0	1	1



*Dimension is to lead centerline when formed parallel.
 Ⓞ 4 Insulating stand offs are provided.

RECOMMENDED OPERATING CONDITIONS:
 SUPPLY VOLTAGE Vcc: 4.75V TO 5.25V
 ELECTRICAL CHARACTERISTICS:
 TA = 0°C TO 75°C

5401-302-MC4016P

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS X ± .05 XX ± .01 XXX ± .005	LIST OF MATERIAL			
FRACTIONS 1/64 ANGLES 0°-30°	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
MATERIAL	NETWORK PROGRAMMABLE MODULO-N DECADE CONTR.			
FINISH	SIZE CODE IDENT. NO. DWG NO. ISSUE			
	A 82679 NW192 Ø			
	SCALE SHEET OF			
	DATE 12/1/72			
	DRAWN GE			
	CHECKED			
	ELECT. DES.			
	MECH. DES.			
	FINAL APPROVAL			
	O. POSE			

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APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	TM 125								
	GPR-110								
				Ø Original Release	1-19-77		GDL		*

RCA
CA3020A

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005				LIST OF MATERIAL	
FRACTIONS 1/64				THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
ANGLES 0° - 30'				LINEAR INTEGRATED CIRCUIT, POWER AMPLIFIER	
MATERIAL	FINAL APPROVAL	DATE			
	MECH. DES.	DATE			
	ELECT. DES.	DATE			
	CHECKED	DATE			
	DRAWN	DATE			
FINISH					
NOTICE TO PERSONS RECEIVING THIS DRAWING THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.	SIZE A	CODE IDENT. NO. 82679	DWG NO. NW193	ISSUE Ø	
	SCALE		SHEET	OF	

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
1	ATSA-3	A4938	0	ORIGINAL RELEASE	4/15/73		CS		

0 VOLTAGE SWITCH

S401-327 (CA3059)

PACKAGE - 14 PIN DIP

MAXIMUM RATINGS, ABSOLUTE-MAXIMUM VALUES, at $T_A=25^{\circ}C$

DC Supply Voltage (between Terminals 2 and 7) 14 V
 DC Supply Voltage (between Terminals 2 and 8) 14 V
 Peak Supply Current (Terminals 5 and 7) +50 mA
 Output Pulse Current (Terminal 4) 150 mA

Power Dissipation:

Up to $T_A = 55^{\circ}C$ 700 mW
 Above $T_A = 55^{\circ}C$ Derate linearly 6.67 mW/ $^{\circ}C$

Ambient Temperature Range:

Operating -40 to + 85 $^{\circ}C$
 Storage -65 to +150 $^{\circ}C$

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS
 .X \pm .05
 .XX \pm .01
 .XXX \pm .005

FRACTIONS
 1/64
 ANGLES
 0 $^{\circ}$.30'

MATERIAL

FINISH

REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
FINAL APPROVAL	DATE	THE TECHNICAL MATERIEL CORP.		
MECH. DES.	DATE	MAMARONECK, NEW YORK		
ELECT. DES.	DATE	NETWORK, IC		
CHECKED	DATE			
DRAWN	DATE			

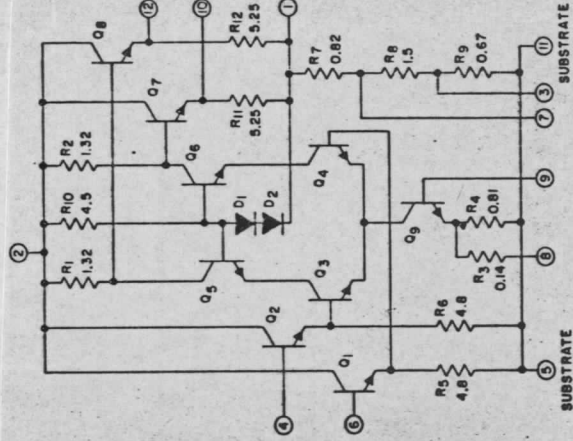
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SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
A	82679	NW194	1
SCALE		SHEET	OF

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1			ORIGINAL RELEASE	5-24-73		CS.		



ALL RESISTANCE VALUES IN K.O.'S.

S40I 327
MFGR. P/N - CA 3040

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS .X ± .05 .XX ± .01 .XXX ± .005 FRACTIONS 1/64 ANGLES 0° - 30°			LIST OF MATERIAL	
MATERIAL	S. DEMARCO FINAL APPROVAL MECH. DES. ELECT. DES. CHECKED DRAWN GE			
FINISH	DATE 5/14/73 DATE DATE DATE DATE 5/14/73			
	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK			
	NETWORK INTEGRATED CIRCUIT, WIDEBAND AMPLIFIER			
	SIZE A	CODE IDENT. NO. 82679	DWG NO. NW 195	ISSUE 0
	SCALE	SHEET		OF

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REVISIONS

APPLICATION

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	RSU-1		Ø	ORIGINAL RELEASE	5/24/73		CS		

MANUFACTURER S401-440

TMC PART NO.	MFG. PART NO.	VOLTAGE
NW196-1	UGH-7805	5 VDC
NW196-2	UGH-7812	12 VDC
NW196-3	UGH-7824	24 VDC

NW196-4 UG-7818 18 VDC

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS
.X ± .05
.XX ± .01
.XXX ± .005

FRACTIONS
1/64
ANGLES
0° - 30'

MATERIAL

FINISH

SYM.

DESCRIPTION

PART NUMBER

REQ'D ITEM

LIST OF MATERIAL

FINAL APPROVAL
S. J. Manso

MECH. DES.

ELECT. DES.

CHECKED

DRAWN

DATE
5/24/73

DATE

DATE

DATE

DATE

THE TECHNICAL MATERIEL CORP.
MAMARONECK, NEW YORK

VOLTAGE REGULATOR

ISSUE

DWG NO.

SIZE
A

CODE IDENT. NO.

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NW196

82679

SCALE

SHEET

OF

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	GPR-110		Ø	Original Release	1/17/77		GDL		*

REF TI(SN7482N)

NETWORK, I.C.,

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS X ± .05 .XX ± .01 .XXX ± .005				LIST OF MATERIAL	
FRACTIONS 1/64 ANGLES 0°-30'	FINAL APPROVAL		DATE	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
MATERIAL	MECH. DES.		DATE	2-BIT BINARY FULL ADDERS	
FINISH	ELECT. DES.		DATE		
	CHECKED		DATE		
	DRAWN	GDL	DATE		
			DATE		
NOTICE TO PERSONS RECEIVING THIS DRAWING			SIZE	DWG NO.	ISSUE
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			SCALE	SHEET	OF

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASSY NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
-	GPR-110		Ø	ORIGINAL RELEASE	1/19/77		GAL		*

REF TI (SN 74H103A)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES	REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
DECIMALS X ± .05 .XX ± .01 .XXX ± .005				LIST OF MATERIAL	
FRACTIONS 1/64 ANGLES 0°-30°				THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
MATERIAL	FINAL APPROVAL	DB	DATE	Network, IC, DUAL FLIP-FLOPS	
	MECH. DES.		DATE		
	ELECT. DES.		DATE		
FINISH	CHECKED		DATE		
	DRAWN	G.O.L.	DATE		
<p>NOTICE TO PERSONS RECEIVING THIS DRAWING</p> <p>THE TECHNICAL MATERIEL CORPORATION claims proprietary right in the material disclosed hereon. This drawing is issued in confidence for engineering information only and may not be reproduced or used to manufacture anything shown hereon without permission from THE TECHNICAL MATERIEL CORPORATION to the user. This drawing is loaned for mutual assistance and is subject to recall at any time.</p>				SIZE	ISSUE
				A	Ø
				CODE IDENT. NO.	
				82679	
				DWG NO.	
				NW 198	
				SCALE	OF
				SHEET	

APPLICATION

REVISIONS

QTY	MODEL USED ON	ASS'Y NO.	LTR	DESCRIPTION	DATE	E.M.N.NO	DRAFT	CHKD	APPD
	G.P.R. 110		Ø	ORIGINAL RELEASE	1/11/77		GDL		*

REF TI(SN7410N)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES AND INCLUDE CHEMICALLY APPLIED OR PLATED FINISHES

DECIMALS FRACTIONS
 .X ± .05 1/64
 .XX ± .01 ANGLES
 .XXX ± .005 0° - 30'

MATERIAL

FINISH

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REQ'D	ITEM	PART NUMBER	DESCRIPTION	SYM.
LIST OF MATERIAL				
FINAL APPROVAL	DB	DATE 1/11/77	THE TECHNICAL MATERIEL CORP. MAMARONECK, NEW YORK	
MECH. DES.		DATE	Network, Inc	
ELECT. DES.		DATE	3-Input Positive NAND GATE	
CHECKED		DATE		
DRAWN	SAL	DATE 1-11-77		

SIZE	CODE IDENT. NO.	DWG NO.	ISSUE
A	82679	NW199	⊗
SCALE	SHEET	OF	